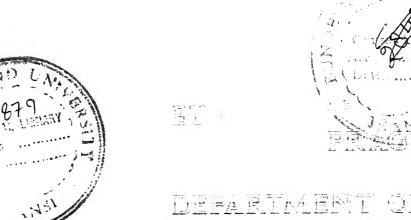
# STUDIES ON THE AVIAN GESTODE PARASITES OF BUNDELKHAND REGION

Thesis submitted to the Bundelkhand University
For the Degree
Of
Dector of Philosophy
in
Zoology





1996

KHARB M So

DEFARTMENT OF ZOOLOGY BIPIN BIHARI (F.G.) COLLEGE JHANSE (U.P.) WORK IS DEDIGATED

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# CERTIFICATE

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## SUPERVISOR'S GERTIFICATE

"STUDIES ON THE AVIAN GESTODE PARASITES OF BUNDELKHAND REGION" embodies the original research work of Km. Pragga Khare, M.Sc.(Zoology), who worked under the guidance of undersigned during 1994-1996 in the Department of Zoology, Bipin Bihari Post Graduate Gollege, Jhansi. The thesis has not been submitted for any degree to any other university.

Africylar
(Dr. A.K. Srivastav)

Ihansi
Date : 20.11.96

## PART - A

AGKNOWLEDGEMENTS
INTRODUCTION
HISTORICAL
MATERIAL AND METHODS
HOST PARASITES LIST
GLASSIFIED LIST OF GESTODE

### ACKNOWLEDGEMENTS

Through this thesis every attempt has been made to extend to study on cestodes of Bundelkhand zoo-geographical zone by the author's topic." Morphology & Taxonomy of Cestode Parasites". As one of the member of the carvan which is carrying forward the precious burden of the knowledge gift of goddess Saraswati in this field from basest to upward.

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The author with great sense of gratitude. concludes her thesis by recollecting initial lines of her supervisor Dr.A.K.Srivastav, that human individual is not a mere object amoung objects, a thing amoung things, without meaning, for that the author shall remain thankful.



Map of Bundelkhand Region

#### INTRODUCTION

A number of domestic and wild species of birds constitute highly nutritive food for human beings. The relationship of human beings with birds had developed enjoyment of birds as food and sport. Thus they form a significant economically important group. These birds are invariably infected by a large number of Heiminths. Viz. cestode, trematode and a nematode parasites which cause deterioration in their health and hence their nutritive and market value is affected. The curiosity of the author to know about the helminth parasites found in such birds lead him to undertake the present project. In the present thesis the author has restricted herself to the morphogical and taxonomical studies of the cestode parasites found in the birds.

Birds were collected from different regions of bundelkhand. Bundelkhand region includes Banda. Bhind. Chhatarpur, Datia. Damoh. Gwalior. Guna. Hamirpur. Jabalpur. Jalaun. Jhansi. Lalitpur. Morena. Narsinghpur. Panna. Raisen. Sagar. Shivpuri, Satna, Tikamgarh and Vidisha districts of Uttar Pradesh and Madhya Pradesh states. The main and important rivers of this region are Betwa. Chambal, Dhasan. Ken. Narbada and Tauns.

Bundelkhand region shows nearly 100 cm

rainfall per year. Though it may be quite not in june and mercury touches  $48^{\circ}$ c but the rainy and winter seasons are very-very pleasant. In winter the maximum temperature is around  $25^{\circ}$ c and the maximum  $5^{\circ}$ c.

Geographically the bundelkhand region ranges from 24.11 to 26.27 north latitude and 78.10 to 81.34 mid of the eastlongitude.

The present thesis deals with some of the interesting cestodes obtained during the survey which included formation of new subfamily podicellinae n.subfam., and the discription of eleven new genera, thirteen new species and redescription of one old species.

The new subfamily, new genera and new species reported in the thesis belong to the family Amoplocephalidae Cholodkovsky, 1902; Davaineidae Fuhrmann, 1907; Dilepididae Railliet et Henry, 1909; Hymenolepididae Raillet et Henry, 1909; Amabiliidae Ransom, 1909; Diploposthidae poche, 1926; Dioecocestidae southwell, 1930 of order Cyclophyllidea Ben in Braun, 1900.

A brief review relating to the cestode general described in the thesis is given below:-

The Genus *Killigramia* Maggitt, 1927 contains twelve species from the whole world. The first report of the genus pertains to *Killigramia delafondi* 

Railliet. 1892 from Columba domestica in France. Out of the nine oriental species six have been reported from Indian sub continent. The first report of the genus from Indian sub continent is that of Medgitt. 1927. Other workers who have contributed to the knowledge of this genus from Indian sub continent are Sharma. 1943; Johni. 1962; Srivastava and Capoor. 1965; Ducqai and Gupta. 1987 and Srivastava and Srivastava. 1989.

The denus Ophryocotvius Srivastav et Capoor. 1982 contains single species. Ophryocotylus dinopii in Dinopium benghalense, which has been reported from the Indian sub continent and the oriential region. The present new species represent the first report of the denus from the Bundelkhand region.

The denus Uphryocotyloides Fuhrmann. 1720 contains fifteen species from the whole world. The first report of the genus is Uphryocotyloides pinquus (Fuhramnn. 1704) in Bucorax abyssinicus and Bucorvus leadbeateri from Africa. Out of the various species of the genus thirteen have been reported from the Indian sub continent which represent the oriental species. The first report from the Indian sub continent pertains to Ophryocotyloides meggitti Moghe, 1733 from the bird. corvus splendens. Other workers who have contributed to the knowledge of the cestode genus from Indian sub

continent are Moohe et Inamdar. 1934: Inamdar. 1944: Singh.1962: Gupta et Grewal. 1971: Malhotra et Capoor. 1979: Tewari. 1987 and Dixit and Kushwaha. 1994.

According to Schmidt, 1986 and Sub genus belong to Raillietina (Raillietina) Fuhrmann. 1920 contains one hundred and seventy four species. Out of which fifty four species have been reported from the Indian sub continent. The first report of the sub denus to Raillietina (Railletina) pertains frontina 1845) Fuhrmann. 1924 in Gecinus Viridis. (Du.iardín. Dendropus major. Dendropus tennirostris. Dendropus medius. Ficus martius. Ficus carelini. Colaptes campestris. Oriolus galbula, Dryocopus martius. Lanius excubitor. Campethera nubica. Picus canase Indochina, south America and Europe. The firstreport of the subgenus from the Indian sub continent is that of Raillietina (Raillietina) volzi (Fuhrmann, 1905) Fuhrmann, 1924 in Gallus qallus, columba livia. Pava cristatus from sumatra. India and Russia . The other workers who have contributed to the knowledge of this cestode subgenus are Sinha. 1960: Gupta et Grewal. 1969. 1971: Malviya et Dutt. 1971: Guota et Madhu, 1981. The present new species represents the first report of the genus from the Bundeikhand region.

The genus Choanotaenia Railliet. 1896 conains as many as seventy eight species from the

whole world. Twenty one species from the Indian sub continent. The first report of the genus is Choanotaenia nilotica (Krabbe. 1869) Railliet, 1896 in Cursorius isabellinus from North Africa. In India the first report of the genus *Choanotaenia condwana* Inamdar. 1934 in *Passer domesticus*. The other workers who have contributed to the knowledge of these cestodes are Saxena, 1972: Dixit and Capoor. 1989. The present new species represents the first report of the genus from Bundelkhand region.

The two new genera Jalpai n.g. and Raksia n.g. is a representative of the subfamily Dilepidinae Fuhrmann 1907. The family Dilepididae Railliet et Henry 1909, comprises fifty eight genera from the whole world. The present form Jalpai sipriensis n.g., n.sp. is the first report of the subfamily Dilepidinae Fuhrmann, 1907 from an avain host in whole of the world.

The genus Amoebotaenia Cohn. 1900 contains twenty two species from the whole world. The first report of the genus is that of Amoebotaenia cuneata (Linstow, 1872) Cohn, 1900. So far twelve species have been reported from the Indian sub continent. The first report of the genus from the Indian sub continent is that of Amoebotaenia setosa Burt, 1940 in Labipluvia melabarica from Sri Lanka. The other workers who have

contributed to the knowledge of this genus are Pillai et Peter, 1971: Shinde. 1972: Kalyankar et Palladwar. 1977: Srivastava. 1979: Shinde. Ghare et Survawanshi. 1980: Dixit and Capoor. 1981: Srivastava and Srivastav. 1987 and Srivastava. Srivastav and Khare. 1995.

The three new denera Laterotestina n.g.:

Vireshwari n.g. and Transvertia n.g. represents the subfaimly Dilepidinae Fuhrmann. 1907 of the taimly Dilepididae Ralliet et Henry: 1909. The subfaimly Dilepidinae Fuhrmann, 1907 comprises fifty eight genera from the whole world.

The genus Armadoskrjabinia Spasskii et Spasskaja, 1954 contains eight spacies from the whole world which includes two from the Indian sub contient and the oriental region. The first report of the genus that of Armadoskrjabinia rostellata partain to (Abildgaard, 1790) Yamaguti, 1959 (syn. Taenia rostellata Abildoaard, 1790, T. capitellata Rudolphi, 1810, Diplacanthus (Dilepis) capitellata Cohn. Hymenolepis capitellata Railliet. 1899). in colymbus grisegena, colymbus spp.. Fodiceps hooboelli. Gavis spp., Europe, North America. The first report of the genus from the Indian subcontenent is that Armadoskrjabinia medici (Stossich. 1890) Spasskii et. Spasskaja, 1954 Syn. ľaenia medici stossich. 1890, Hymenolepis medici (Stossich 1890) Fuhrmann 1906. Me

inlandia medici (Stossich 1870) Mayhew 1925. Dicranotaenia medici (Stossich 1870). Skrjabin et Mathevossian. 1945. Echinorhynchotaenia medici (Stossich. 1890) Baer. 1959). in Pelecanus onocrotalus. P. Philippensis. P. refesiens: Europe. Africa. India. Malaya. The present new species is the third species of the genus Armadoskrjabinia from the Indian sub continent and the oriental region.

The genus passerilepis Spasskii et Spasskaja. 1954 contains twenty seven species from the whole world. The first report of the the genus partains to Passeriledis crenata (Goeze. 1782) Sultanov et Spasskaja. 1959 in Corvus from Russia. So far six species have been reported from the Indian sub continent. The first report of the genus from the Indian sub Continent is that of Passeriledis passeris (Gmelin, 1790) Spasskii et Spasskaja 1954 in Passer domesticcus from India. The other workers who have contributed to knowledge of this genus are Fuhrmann. 1918: Meggitt, 1933: Burt, 1944; Sawada et Kugi. 1980; Gigon et Burt, 1991; Rani, 1993. The present new species Fasserllepis domestica n.sp. represents the second report of the genus from Bundelkhand region.

The new genus Hardayali n.g. is a representative of the family Hymenolepididae Railliet et Henry. 1909; Sub family Hymenolepidinae Ferrier.

1897. The Sub family comprises seventy six denera from the whole word.

The genus Dicranotaenia Railliet. 1892 contains fifty five species from the whole word. The first report of the genus pertains to Dicranotaenia aequabilis (Rudolphi, 1810) Railliet, 1893 in cygnus sp. from Russia. So far six species have been reported from the Indian sub-continent. The first report of the genus from Indian subcontinent is that of Dicranotaenia anandalei (Southwell, 1922) Lopez-Nevra 1932 in Limosa belgicae from India. The other workers have contributed to the knowledge of the genus are Burt, 1944; Srivastav and capoor, 1980; Sawada and Kugi, 1981 and Daisy Rani 1993.

The genus Variolpis Spasskii et Spasskaja.

1954 contains thirty three species from the whole world. Out of them six have been reported from the Indian sub continent. The first report of the genus pertains to Variolepis farciminosa (Goeze, 1782 ) in Sturnus vulgaris, Sturnus oriolus, Pica pica, Gracupica nigricollis, Acridotheres tristis, Corvus, Garrulus from Europe. The first report of the genus from Indian sub continent is that of Variolepis planestici (Mayhew, 1925 ) Spasskii et Spasskaja, 1954 in Acridotheres tristis from India, Other woekers have contributed to the knowledge of this genus are Inamder.

1984: Tewari. 1987 and Kudi. 1990.

The present new genus Unischistotaenia represents the family Amabiliidae Ransom, 1909. So far only five genera have been reported from the whole world. Out of them four genera have been reported from the oriental region and indian sub-continent. The present new genus is the fifth from the Indian sub-continent and the oriental region.

The new genus Fodiposthe n.g. is a representative of the family Diploposthidae Foche. 1926. The family Diploposthidae Foche. 1926 comprises of three genera from the whole world. The present from Fodiposthe hridyali n.g. n.sp. is the first report of the family Diploposthidae Foche. 1926 from the Indian sub continent.

The genus Jhansizia kani. Tewari and Khare, 1975 comprises of single species, Jhansizia Jhansiensis in Podiceps ruficollis which has been reported from the Indian sub continent and the oriental region. The present new species Jhansizia tikamgarhensis n. sp. represents the second species from the Eundelkhand region.

The new genera Bundelkhandia n.g. Dimorphocestus n.g. and Podicelia n.g. represent the family Dioecocestidae Southwell. 1930. The genera Bundelkhandia n.g. and Dimorphocestus n.g. represents

the sub family Dioecocestinae Fuhrmann, 1936. So far single genus Dioecocestus has been described under this sub family.

The present new form Podicelia n.g. does not fall in the existing sub family Dioecocestinae Fuhrmann. 1936 and Gyrocoeliinae Yamaquti. 1959 hence a new sub family Podiceliinae n.sub.fam. is created for the new genus.

#### HISTORICAL

Several workers have contributed to the knowledge of cestode taxonomy from the Indian subcontinent. Southwell contribution has timen classical. Apart from his classical volume of fauna of British India. his pioneering contributions include the descriptions of many new species. In 1913 Southwell reviewed the cestode material then existing in the Indian museum collection. The review included the description of twenty species and the redescription of some known species. The other important contributions of Southwell from avian hosts include /atrabothrius erostris (1916). Paradilepis kempi (1921). Dicranotaenia annadalei (1922). Raillietina (A.) fuhramnni (1922). Raillietina (5.) centropi (1922). Soiniolans microsoma (1922), Parvirostrum magnisomum (1930) and Raillientina (F.) korkei (1930) and Raillietina (f.) maplestonei (1930). It will not be an exaggeration to say that his contributions gave great stimulus and a direction to the study of cestodes in this subcontinent and its neighbourhood.

Meggitt's studies comprised forms mainly from Burma and included *Cotuonia tasticata (1920).*\*\*Hottuynia linstomi (1921), Cotuonia cuneata var.

\*\*nersova (1924) Cotuonia tenius (1924), Raillietina (R.)

Parviuncinata (1924 with saw), kaillentina (k.) torouata (1924). Cotuonia seni (1924). Paricterotaenia barbara (1926). Paricterotaenia innominate (1926). Paricterotaenia maonicirrosa (1926) " Raillietina (f.) birmanica (1926). Raillietina (f.) aseudoechinobothrida (1926). Raillietina (P.). facilis (1926). Raillietina (P.). revnoldsae (1926). Raililetina (A.) flaccida (1926), Staphyleois rustica (1926), Amoebotaemia friqida (1927). Anomotaenia dubia (1927), Anomotaenia fortunata (1927), Armadoskrjabinia magniuncinata (1927), Choanotaenia aegyptica (1927), Cotugnia fleari (1927), Cotuquia polycantha var. paucimusculosa (1927). Diorchis longicirrosus (1927), Echinocotyle birmanica (1927) Hispaniolepis falsata (1927), Killigrewia frivola (1927), Killiorewia pamelae (1927), Lioa facilis (1927), Nadejdolepis magnisaccis (1927). Paradilepis ficticia (1927). Paricterotaenia falsificata (1927), Kaillietina (K.) famosa (1927). Raillietina (R.) flabralis (1927). Giuterina fallak (1928), Cotuania fila (1931), Mesocestides tenuis (1931). Raillietina (f.) fecunda (1931) Raillietina (A.) flaminata (1931). Raillietina (A.) franilis (1931). Raillietina (K.) pseudocrytus (1931) . Dioecocestus fevita (1933). Mayhemia filta (1933), fasserilepis fola (1933) and Raillietina (P) fulvia (1933) .

The important contributions of Moghe from avain hosts comprises Panuma Chandlers (1925). Raillietina (R.) naopurensis (1925), Raillietina (R.) quadritesticulata (1925). Sauthmellia pallinarum (1925). Baeria orbiuterina (1933). Echinocotyle omens (1933). Dahryocotyloides mengitti (1933). Unciunsa acapillicirrosa (1933). Ophryocotyloides monacanthis (1934 mith Inamdar). Paruterina septotesticulata (1934 mith Inamdar). Raillietina (P.) duosyntesticulata (1934 mith Inamdar). Raillietina (P.) molpastina (1934 mith Inamdar). Raillietina (P.) molpastina (1934 mith Inamdar). Raillietina (P.) molpastina (1934 mith Inamdar). Refereted two new genera Southmellia (1925) and Baeria (1933).

and Baeria (1933). The investigations of Johri, L.N. ranged over Burma and several parts of India. His importants contributions comprise faruterina megaitti 129311. Raillietina (R.) perplexa (1933), Lotupnia januaria (1934). Lontugnia noctua (1934). Eugonodaeum ganjeum (1934). Eugonodaeum testifrontosa (1984). Gidhaza indica (1484). Uliporchis hieraticos 115341. (S.) kakia (1934). Raillietina Raillietina 1 A . 1 penetrans var. nova (1934), Haploparakis Kamayuta (1935), Lotugnia longicirrosa (1939), Diorchis alvedea (1939), Diorchis chalcophapsi (1939), Diorchis lintoni (1939) Raillistina (P.) SYMONSII 119391. Microsomacanthus oyooonka (1941), Olioorchis burmanensis (1941). Eugonodaeum burmanense (1951).

Eugonodaeum bybralis (1951), Thaparea magnivesicula (1953), Bymenolepis jasuta (1960), Bymenolepis jerralta (1960), Bymenolepis longiovata (1962), and killigremia indica (1962). Johri established two new genera viz., Bidhaia (1934) and Thaparea (1953).

Inamdar's contributions include Malika pittae (1933), Choanotaenia gondwana (1934), Similuncinus totani ochropodis (1934), Shipleya ferrani (1942) and Ophryocotyloides bhaleroi (1944).

Burt studied cestodes from Sri Lanka and his researches of forty years covered a very wide range and included descriptions of numerous forms including Angularella magniuncinata (1938), Angularella minutiuncinata (1938), Notopentorchis collocalise (1938), Pseudanqularia thompsoni (1938), Pseudanqularia triplacantha (1938), Pseudochoanotaenia collicaliae (1938), Infula burhini (1939), Paronia biuterina (1939), Paronia calcauterina (1939), Paronia coryllidis (1939), Amoebotaenia setosa (1940), Choanotaenia dispar (1940), Choenotaenia magnihamata (1940), Cotuqnia magna (1940), Cotugnia polytelidis (1940), Komalemskiella glareolae (1940), Romalemskiella stagnatilidis (1940), Malika kalawawaansis (1940), Malika zeylanica (1940). Microsomacanthus childi (1940), Onderstepoortia burhini (1940), Onderstepoortia lobipulviae (1940), Panuma

lobivanelli (1940). Paricterotaenia tringae (1940).
Parvitaenia ardeolae (1940). Raillietina (6.)
caprimulqi (1940). Dicranotaenia ellisoni (1944).
Dicranotaenia uraganaensis (1944). Krimi chrysocolapris (1944). Passerilepis septemsororum (1944). Burt erected following new genera viz.. Pseudanoularia (1938).
Pseudochoanotaenia (1938). Notopentorchis (1938).
Infula (1939). Panuma (1940) and Krimi (1944) from avian hosts. Some of Burt's species have been reported from India also.

Sharma (1943) contributed following new species from Nepal. Dicranataenia apicaris. Hispanialepis Kaiseris. Hymenosphenacanthus ranooonica. Microsomacanthus jamunicus. Mepalesia jeodhii. Raillietina (f.), nepalis Raillietina (f.) parbata. Raillietina (f.) nepalis Raillietina (f.) kantipura. Raillietina (f.) kantipura. Raillietina (f.) nripendra Raillietina (f.) dhuncheta. Staphylepis infrequens and vampirolepidoides krishna. Sharma erected a new genus. Nepalesia.

Singh, K.S. has done extensive work on the morphology and taxonomy of cestodes from birds and mammals of India. His important contributions are Angularella swifti (1952). Anoncotaenia gaugi (1952), Aporina percnopteri (1952), Choanotaenia hypolemia (1952). Cotugnia dayali (1952), Dilepis ardeolae (1952). Diorchis tilori

(1952). Echinocotyle hypoleuei (1952). Echinocotyle minutissima (1952). Haploparaxis tandani (1952). Hymenlepis ababili (1952). Hymenolepis crecca (1952). Hymenolepis quuqi (1952), Hymenolepis maona (1952). Wymenolepis makundi (1952). Lapminoia reticulosa (1952). Necanquiaria ababili (1952). Medija diplacantha (1952). Notopentorchis micropus (1952). Parjeterotaenia milvi (1952). Progynotaenia longicirrata (1952), vitta swifti (1952), Indotaemia indica (1962), Ivritaenia myktesmarensis (1962). Uphryocotylodies makundi (1982). Urhryocotyloides picuri (1962), Raillietina (R.) thapari (1963), Anoncotaenia indica (1964), Biuterina coracii (1964), Biuterina dicruri (1964), Choanotaenia tandani (1964). Uphtyocotyle indicus (1964). Panuwa stylicirrosa (1964). Dilepia kumaunensis (1962 with landon. B.K.) and Marhemia levinei (1963 with landon, 8.K.). Ophryocolytoides dasi (1964, with Tandon, B. K). Apart from the new species mentioned above Singh redescribed a number of old species as well. His new genera include Indotaenia, Ivritaenia, Lapminoia, Necanquiaria and Neolioa.

Singh, K P described *Echinorhychotaenia lucknowensis* (1956), *Choanotaenia aurantia* (1958), *Diorchis qigantocirrosa* (1960), *Anomotaenia oligorhyncha* (1960), *Biuterina mequitti* (1960),

Urmenolepis smythi (1960). Prooynotaenia leucura (1960), Uphryocotyloides haemacephala (1961).

The important contributions of Johni. G.N. are Infula indica (1959). Dilepis balacea (1960). Hymenolepis ciconia (1960) Hymenolepis oracea (1960). Hymenolepis tanakpuria (1960). Cloacotaenia (Syn.Lallum Johni. (1960) Spassky and Spasskaja, 1968. Neoligorchis alternatus (1960). He erected a new genus Neoligorchis.

Srivastava. V.C. has described Killioremia allahabadi (Syn. Columbia allahabadi. 1965 with Capoor), Ameobotaenia gallusiana (1979), Raillietina (P.) capoori (1980), with Sawada), Echinocotyle sinohi (1980, with Pande), Khabdometra agarwali (1984 with pande), Krimi simhai (1984, with lewari) and nadejdolepis umashankari (1987, with Srivastava) and streptoperlia sengalensis (1987, with Nigam)

Capcor. V.N. described Taurikia ohoshi (1966). Mogheia bayamegaparuterina (1967), Mymenocoelia chauhani n.g., n.sp. (1964, with Srivastava. V.C.), Columbia muiri(1966, with Srivastava V.C.), Moghia megaparuterina (1966 with Srivastava, V.C.). Davaines hemetensis (1972, with Dhawan), Valipera sultanpurensis (1975, with Srivastava, V.C. and Chauhan), and Barbusa passeri n.g., n.sp. (1975, with Srivastava V.C.) Capcor

and Srivastava. V.C. erected two new genera viz. Barbusa and Bymenocoelia new species Marhewia epopi: Griporhynchus pandii (1990. 1992 with Mishra and Singh)

Maharashtra. His important contributions are Sureshia affinis (1968). Sureshia alii (1968). Lapaingia adlabarica (1972). Lapaingia singhi (1972). Lapaingia rageshwarii (1972). Neyraia magnei (1972), and Neoliga singhi (1981 with Jadhav and Kadam). He erected a new qenus Madiangularia. New species Anonchotaenia single (1987). Krimi udgirensis (1987 with Guikwad). Krimi tringae (1992 with Sonume and Gaikwad). Raillietina nagpurensis (1992 etal.) and Davainea Kromerii (1993 etal.)

Gupta. N.K. and Grewal, S.S. described Raillietina (R.) buckleyi (1969). Raillietina (R.) streptopeliae (1969). Raillietina (R.) inda (1970). Cotupnia meggitti (1971). Uphryocotyloides corvorum (1971). Uphryocotyloides sharmai (1971). Gupta and Madhu described Raillietina (R.) rybickae (1981) and Raiolietina (R.) delhiensis (1982).

Malviya and Dutt described a new species of Cotugnia (1969). Raillietina (A.) mehrai (1971). Raillietina (A.) singhi (1971). and Raillietina (A) torousta (1971).

Pandey. K.C. studied and described some species of cestodes from birds. He described two new species Staphylepis indica and Staphylepis meoditi (1981. with Tayal, V.), Weyraia mearutensis (1982. with Chaudhary), Lapmingia sureshi (1984), Panuma chauhani (1984), Panuma roriensis (1984) and Sabolevicanthus mearutensis (1983 with Kaivanshi).

Srivastava, A.K. described a number of cestode species from birds and mammals. They are Vampirolepis molus (1979, with Lapoor). Wayraia sultanpurensis (1980), Dicranotaenia alcippina (1980, with Capoor), Valipora amethiansis (1981, with Capoor), Ophryocotylus dinopii (1982, with Capoor), Cotuunia rihandensis (1984, with Capoor), Lotuquia parakeetus (1985, with Capoor). He erected a new genus Ophryocotyus from the avain host.

The pioneer workers on the morphology and taxonomy of cestodes of birds from the Bundelkhand region are Srivastava, B.K. and Srivastava, A.K. They described Amoebotania Capoori (1987), Meyraia dayali (1988), Raillietima (f.) talourensis (1988), Raillietima (f.) talourensis (1988), and Raillietina (f.) mothensis (1988, with Dhirendra), Doublesetina fotedari (1989), Killigremia Srivastavai (1989), Decacanthus beundelnsis (1989), Amoebtaenia agramali and

Anoncotaenia caudatai (1995 with Khare). They erected new denus Doublesetina (1989) from avain host. Daisy Rani, Tewari, J.P. and Pragya Khare erected new genus Jhansizia (1995), new species Jhansizia jhansiensis (1995) from avian host.

Gupta. S.P. and Sinha. N. described *Boohera* copysychi (1982), Boghera orioli (1982), Angularelia corvunensis (1985), Lateriporus dicruri (1985) and Beoanoularia micropusi (1985).

Apart from the atoresaid contributions a number of stray papers have been published by Fuhrmann. (1905, 1908, 1909 and 1912). Linstow (1906). Smith, Fox and White (1908), Johnston (1909, 1911). Baczynska (1914). Sondhi (1923), Joyeux (1928 with Houdemer. Subramanian (1928). Patwardhan (1935). Bhalerao (1936). Amin (1939, 1940). Mudaliar (1948). Chattarjee (1954). Mukherjee (1964, 1965, 1970). Ali and Shinde (1966), Fotedar 1973, 1976, 1977, 1980 with Chishti). Fotedar (1978 with Bambroo). Khan and Habibullah (1967, 1971) Dhawan and Capoor (1972). Chishti (1973, 1980). Fotedar (1974). Bilgees (1974, with Sultana). Ghosh (1975). Baugh and Saxena (1975, 1976).

Kalyankar and pailadwar (1977. Matta and Ahluwalia (1977), Wason and Johson (1977), Saxena (1978 with Baugh), Ghare and Shinde (1980). Grewal and Kaur

(1981), Jadhav and Shinde (1981 with 1992 Sharge). Kishore and Sinda (1982). Chisti (1982 with Khan). Srivastava. C.B (1983 with pandey. K.C. and Tayal. V). Kolluri. Vijaya Lakshmi and Rao (1984. 1985). Dixit and Capoor (1981). Chisti (1986, Mir and Rasool). Bhalva and Capoor (1987a and 1987b). Sharma and Mathur (1987). Ashfaq (1989 with Shinde). Survawanshi (1990 with Jadhav). Gupta, V (1992, with Singh). Jadhav. B.V. (1993 with Nanaware). Dixit (1994 with Kushwaha).

#### Material and Methods

The birds from Bundelkhand region were collected for the cestode parasites. Each bird was dissected with in twelve hours of the kill. In a large glass petridish full of normal saling water the intestine was opened with a slit. It was lightly shaken and the contents decanted several times. The intestine and its contents containing parasites were examined throughly under a binocular microscope to ensure that none of the parasite is left behind. Some of the cestodes that remained adherent to intestinal mucosa were detached by putting the intestine in hot (60 c) saline water. This induced the worms to relax and detach them selves from the intestine with out any injury to the scolax. The worms were stretched in luke warm water and in case of larger worms, by lifting them with the help of needles or forceps against the edges of petridishes repeatedly for several times and later on fixed in 5% formalin or alcoholic Bouin's fluid. Fixed and worms were stored in 5% formalin till needed for study.

The whole mounts were stained in either Borax carmine or Mayer's Haemalum. The Mayer's Haemalum proved to be the best stain for cestodes. Whole mounts were either cleared in xylol or clove oil.

Doly camera lucida drawing wers taken. All the measurements have been taken in millimeters unless otherwise stated. Averages have been mentioned in brackets. During the course of study the total number of host thus examined was 255. The nosts examined belong to 25 species of birds.

## HOST PARASITE LIST

2 7 4000 0000 11 1000	NUMBER EXAMINED		CESTODES OBTAINED
Class Aves	anter et la company de la comp	is distance regions also had their in golden is adaptive added to place all their in	Same Production Control (Section Control Contr
Acridotheres tristis	÷	u: LE	Bohryocotylus prasadii n.so.
Anas acuta	algić.	.d.	Dieranataenia acuta n.s.a.
Anas querquedula	j.	<u>2</u>	Harvayali anası N.O., N.Sp.
Anthus noveescelandia	<i>= 11</i>	4	Uphryocotyloides choprai n.sp.
Arthra fuliqula	÷	T.	Amoebotaenia vimleshii n.sp.
Butorides straiatus	<u>É</u> ř	ni i	
Columa livia	j. 25 A	ë	Killioremia  Kalpiensis n.sp.  Uphryocotylus  oralensis n.sp.  Raillientina  (Raillietina)  streptopeliae
Coturnix coturnix		nil	****
Francolinus podiceria.	nus El	77 2 2	
fulica atra	చ్చేక	4	Variolepis lali
Gallinula chlorapus	7	nil	
Gallus qallus	27	Ě	Choanotaenia sonoti Mukhurjee, 1964 Railiietina (Raili tina) jabalpurensi n. sp. Cosuonia rihandens

Bydrophasianus chirurous	3	17 1 1	
Passer domestic	B	2	fasserilepis dome- stica n. sa.
Podiceps ruficollis	£ 5	22	Amorbotarnia gharma- vensis m. sp. Armedoskrjedinia mandel n.sa. Bundelkhandia rufi- collis n.g. m.sp. Diomorphocestus hami rpurensis m.g. m.sp. Jaipai sipriensis m.g m.sp. Jhansizia tikamoarhe msis n. sp. Laterotestina nemar- ensis n.o., n.sp fodicelia sagarensis m.g n.sp. Codinosthe hridyaii n.g n.sp. Unischistotaenia pannaensis n.g. n.sp Variolepis podicepsi n.sp. Vireshwari baruasa- parensis n.g., n.sp.
Pterocles indicus	in the second se	27.11.2	-
Pycnonotus cafer	<u> </u>	±"	Haksia pychonotus n.o., n.sp.
Streptopelia senegale- nsis	in the second se	nil	
Sturnus pagodarum	يَّ <u>بُ</u>	2	Raillietina (Raillietina) indica
Trianga glareola	and the same	nd i	
Turdoides malcolmi	5		Transvertia kareyraensis n.o n.sp.
Vanellus indicus	<u> 5</u>	nil	and the second s

# Classified list of the Cestode parasites Described in the thesis

Class Castoda

Subclass Eucastoda Southwell, 1930

Order Cyclophyllidea Ben. in Braun, 1900

Family Anoplocephalidae Cholodkovsky, 1902

Subfamily Anoplocephalinae Blanchard 1891

Genus Killigrewia Meggitt, 1927

Species Killigrawia kalpiansian.sp.

Family Davaineidae Fuhrmann, 1907

Sub family Ophryocotylinae Fubrmann, 1907

Genus OphryccotylusSrivastav etCappor, 1982

Species Ophryocotylus praiensism.sp.

Species Ophryocotylus prasadiin.sp.

Genus OphryocotyloidesFuhrmann, 1720

Species Ophryocotylpides choprain.sp.

Genus RaillietinaFuhrmann, 1920

Subgenus RailliatinaFuhrmann, 1920

Species Raillietina (Raillietina) jabalourensis

Family Dilepididae Railliet etHenry, 1909

Subfamily Disylidiinae Stiles, 1996

Genus ChcanotaeniaRailliet. 1896

Species Choanotaenia sonotiMukhurjee. 1964

Subfamily Dilapidinae Fuhrmann, 1907

Ganua Jaipain. Ç.

Species Jalpai sipriensian.q. n.sp.

Genus Raksian.q.

Species Raksia bychonotush.o., n.sp.

Genus AmoebataeniaCohn. 1900

Species Ampebotaenia pharmauensish.sp.

Species Amoebotaenia vimleshiin.so.

Genus Laterotestinan.q.

Species Laterotestina newarensien.g., n.sp.

Genus Virsshwarin.q

Species Vineshwani banuasaqarensish.q., n.sp.

Genus Transvartian.g.

Boeices Transvartia Mareyraansien.c. n. sp.

Family Hymenolepididas Railliet etHenry, 1909

Subfamily Hymenolepidines Perrier, 1877

Genus Armadoekriabinia@oesskil at Spasskala,

1 2 2 2

Boedias Armadoskrjabinia pandein.es.

Genus Passerileois Spasskii st Spasskaja. 1954

Boscies Passerilenis domestican.sp.

Genus Heradayalin.q.

Species Hanadayali amasin.g., n.ep.

Genus DichanotaeniaRaillist, 1892

Spacies Dicremotaente acutan so.

Genus VarioleoisSpasskii etSpasskaja. 1954

Species Variolepis lalin.sp.

Speices Variolepis podicepsin.sp.

Family Amabilidae Ransom. 1909

Genus Unischistotaenian.g.

Species Unischistotaenia pannaensisn.g., n. sp

Family Diploposthidae Poche, 1926

Genus Podiposthen.g.

Species Fodioosthe hridyaiin.g., n.sp.

Family Dioecocestidas Southwell, 1930

Subfamily Dioecocestines Fuhrmann, 1936

Genus JhansiziaRani, Tewari, and Khare, 1995

Species Jhansizia tikamparhensish.sp.

Benus Bundelkhandia n.g.

Species Bundelkhandia ruficollien.g., n.sp.

Sanua Diomorphocestusn.q.

Species Diomorphocestus hamirpurensis n.g.,

n. sp.

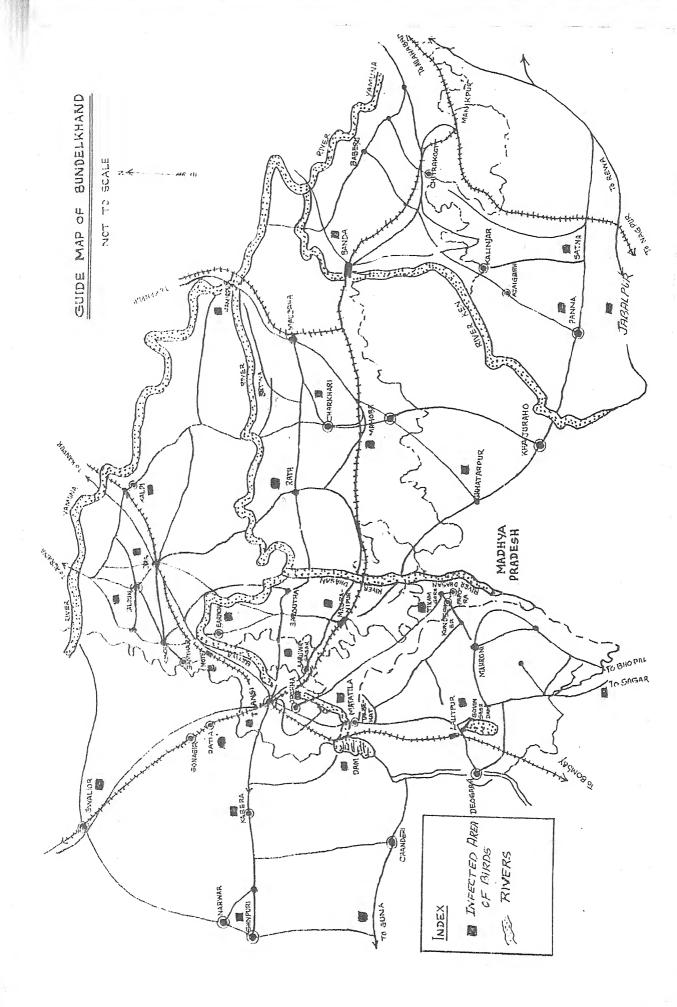
New Subfamily Podiceliinae n. subfamily

Genus Podicelian.g.

Species Podicelia sagarensism.g., n.sp.

## PART - E

# MARRIGACY AND TAXONOMY OF GESTODE PARASTES



Distribution of Infected Birds. Map Indicating Zoogeographical

Family : Ansolocephalidae Cholodkovsky, 1902

Subfamily : Anoplocephalinae Blanchard, 1891

Genus : Killigrawia Meggitt. 1927

Species : Killigrawia kalpiansia n.sp.

( Figs:1-4 .pp 42 )

Out of eight pigeons, Columba livia (Gmelin) examined at Kalpi, one was found infected with single specimen in its intestine. The morphological studies of the cestode revealed them to belong to the genus Killigrewia Meggitt, 1927 of the subfamily Anoplocephalinae Blanchard, 1891; family Anoplocephalidae Cholodkovsky, 1902.

Cestode measure 135 cm in length and 3.480 in maximum width. Strobila cosists of acraspedote and craspedote proplottids, all broader than long.

Scolex measures 0.336  $\times$  0.264, not well demarkated from the neck. Suckers four, unarmed, oval to round measure 0.072 - 0.096  $\times$  0.060 - 0.072 ( 0.084  $\times$  0.066). Rostellum absent.

Neck prominent measures 0.833 x 0.357 . Immature proplettids measure 0.511 - 0.985 x 0.408 - 10173 ( 0.748x0.790): mature proplettids measure 0.456-0.540x2.280-3.480(0.498x2.881) and gravid proplettids measure 0.780-1.068x3.120-3.360 (0.924x3.240).

Testes oval to round, 55-106(81) in number divided into two groups by the female genitalia. Poral group

shows 12-39 testes while the aporal group with 43-67 testes. Testes measures 0.024-0.048x 0.024-0.048(0.036x0.036). Cirrus pouch, 0.120-0.288x0.036-0.072 (0.204x0.054), never crosses the poral ventral longitudinal excretory canal. Internal seminal vesicle measures 0.061-0.132x0.012-0.036 (0.076x0.024). External seminal vesicle absent.

Female genitalia in anterior half of the proportion of the proportion of the proportion of the proportion of the measures of the control of the measures of the control of the proportion of the

Genital atrium. 0.018-0.084 (0.051) deed and 0.012-0.061 (0.036) wide. Senital openings alternate irregularly, situated in middle half of the proglottid margin.

Uterus sac like with many out growths towards anterior and posterior sides. uterus measures 0.048-0.876x2.160-3.012 (0.462x2.586). Eggs measure 0.0096-0.0128x0.0096-0.0128 (0.0112x0.0112). Onchospheres measure 0.0048-0.008x0.0049-0.0080 (0.0064x0.0064).

Ventral longitudinal excretory canal measures 0.012-0.121 (0.067) in diameter.

### Discussion

The present form comes closer to Killigrewia allahabadi Srivastava and Cappor, 1965; Killigrewia delafondi Railliet, 1892; Killigrewia frivola Meggitt, 1927; Killigrewia Srivastavai Srivastava and Brivastav, 1989 and Killigrewia streptopeliae Yamaguti, 1935.

The present form differs from K allahabadi Srivastava and Cappor, 1965 in having larger scolek, smaller suckers, fewer number of larger testes, larger cirrus pouch, larger internal seminal vesicle. absence of external seminal vesicle, narrower ovary, narrower irregular shaped vitelline glend, smaller receptaculum seminis and smaller eggs. From K. delafondi Raillist. 1872 it differs in having larger Ecolek. fewer number of testes. larger dirrus opuch which hever reaches worth ventral longitudinal excretory danala, emaller internal seminal vesicle, absence of external seminal vesicle, narrower overv. different shape of Vitalline bland. emoller receptaculum seminis, uterus with many put growths and smaller sogs. From K. frivols Maggitt. 1927 it differs in having presence of scolex, fewer number of testes. larger cirrus bouch which never reaches upto Ventral longitudinal excretory canal, absence of external seminal vesicle and smaller eggs. From K. Brivastavai Srivastava and Brivastav. 1989 in having

larger scolex, smaller suckers, fewer number of smaller testes. larger cirrus couch which never crosses the ventral longitudinal excretory canal. different shape of wider ovary, different shape of vitalline gland, presence of internal seminal vesicle. narrower receptaculum saminis and smaller aggs. From K. Streptopeliae Yamaquti. 1935 it differe in having larger scolex, presence of neck, fewer number of testes. larger cirrus bouch which never reaches uoto Ventral longitudinal excretory canal, smaller internal seminal vesicle, absence of external vesicle, wider ovary, narrower vitelline gland, smaller receptaculum seminis and smaller eggs.

In the light of above discussion it is proposed to accommodate as a new species. Killiprewie kalpiensis n. 電口。

And your year of : Columba livia (Gmelin)

: Intestina Habitat

Locality : Kaloi.

Jalaun (U.F.)

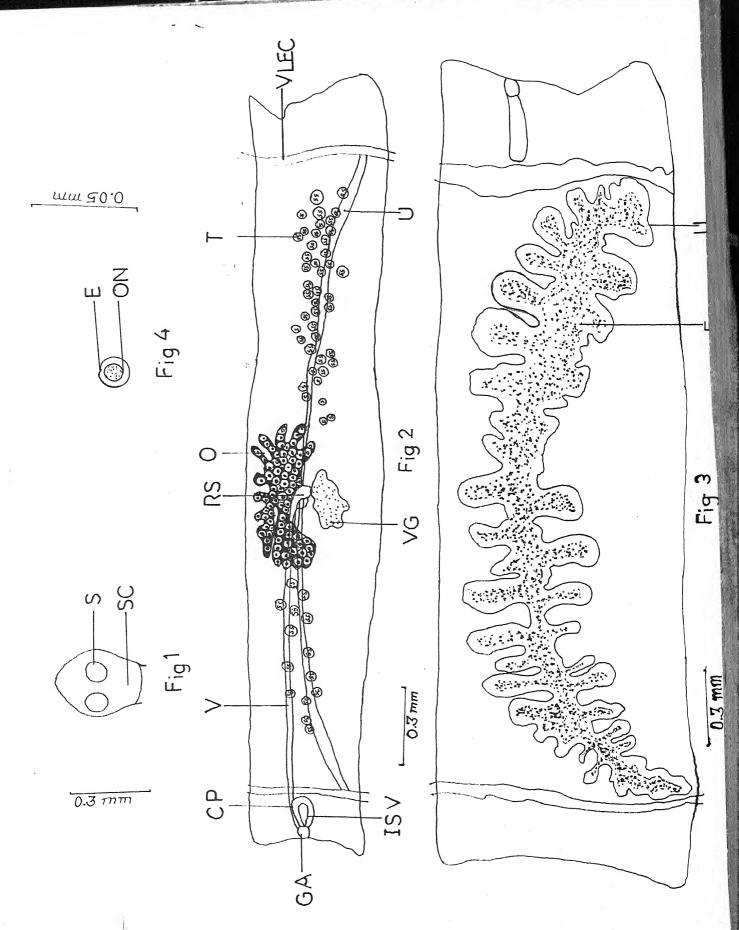
Holotype : Department of Zoology, Bipin Bihari (P.S.) College, Jhansi.

## Killigrewia kalpiensis n.sp.

Scolex (5x10) Fig 1 Mature proglottid (5x10) Fig E Gravid prolottid (5×10) Fig 3 Egg (10x45)

Fig 4

Abbreviations :- CP, cirrus pouch; E, egg; SA, genital atrium; ISV, internal seminal vesicle; 0, ovary; ON, onchospheres; RS, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretary canal.



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Killigrewia kalpiensis

Family - Davaineidae Fuhrmann, 1907

Subfamily - Ophryocotylinae Fuhrmann, 1907

Genus - Ophryocotylus Srivastav et Capcor. 1982

Species - Ophryocotylus oraiensis n. sp.

(Figs. 1-5, PP 48 )

Out of five pigeons, Columba livia (Gmelin) examined at Orai, Distt. Jalaun (U.P.). One was found infected with seven alike cestodes. Cestodes was present in the intestine of the host. Morphological studies of the cestodes revealed them to belong to the genus \*\*Ophryocotylus\*\* Srivastav\*\* et Capoor, 1982 of the Subfamily Ophryocotylinae Fuhrmann, 1907; family Davaineidae Fuhrmann, 1907.

Cestodes measure 80-110 in length and 0.648 in maximum width as seen in the gravid proglottids. Strobila consists of a number of proglottids. Proglottids broader than long and Craspedote.

Suckers four, oval to round, 0.072-0.090x0.054-0.084 (0.081x0.069). Suckers armed with 3-4 rows of spines. Sucker spines. 0.0016-0.0024(0.0020).Rostellum disc shaped, 0.066-0.095x0.078-0.144(0.078x0.111).Rostellar hooks, 0.0096-0.0128(0.012) in length. Rostellum bears 190-250 (220) rostellar hooks arranged in single row.

Neck, 0.372-0.480x0.144-0.210 (0.426x0.177).

Immature proglettids, 0.012-0.132x0.108-0.312
(0.072x0.210); mature proplettids, 0.126-0.210x0.3180.468 (0.168x0.393) and gravid proplettids, 0.1920.301x0.312-0.648 (0.246-0.480).

Testes 10-18 (15) in number, oval to round and distributed posterolateral to femalegenitalia. Testes, 0.012-0.031x0.012-0.030 (0.021x0.021). Cirrus pouch club shaped, 0.048-0.090x0.012-0.042 (0.071x0.027), crosses the Ventral longitudinal excretory canal. Vas deferens present. Internal and external seminal vesicles absent.

Female genitalia situated in the middle of the proglottid. Ovary bilobed, 0.021-0.048x0.024-0.060 (0.035x0.042). Vitalline gland compact, postovarian, 0.006-0.018x0.024-0.042 (0.012x0.033). Vacina. 0.006-0.015 (0.011) in diameter, poens posterior to cirrus pouch in the genital atrium. Receptaculum seminis, 0.024-0.042x0.006-0.012 (0.033x0.009).

Genital atrium, 0.018-0.042 (0.033) wide and 0.024-0.042 (0.033) deep. Genital pores unilateral located in the middle of the proglottide margin.

O.270 (0.192x0.219), between the limits of Ventral longitudinal excretory canals. Eggs. 0.008-0.020x0.008-0.0193 (0.014x0.0136). Onchospheres, 0.0064-

0.0096x0.0064-0.0096 (0.008x0.008).

Ventral longitudinal excretory canals. 0.005-0.024 (0.015) in diameter.

## DISCUSSION

The present form comes closer to Ophryocotylus dinopiiSrivastav etCappor, 1982. However, it differs from Ophryocotylus dinopiiSrivastav etCappor, 1982 in having larger worms, smaller scolex, smaller suckers, larger rostellr hooks, fewer number of smaller testes, smaller circuss pouch which crosses the poral ventral longitudinal excretory canal, narrower overy, smaller vitelline gland, smaller receptaculum seminis, smaller uterus, smaller eggs and locations of genital pores.

In the light of above discussion the present form is accommodated as a new species. Ophryocotylus oraiensism.sp.

Host : Columba livia(Gmelin)

Habitat : Intestine

Locality : Orai, Jalaun (U.P.)

Holotype : Department of Zoology

Bipin Bihari (P.B.) Collage,

Thansi.

Ophryocotylus praiensis n. sp.

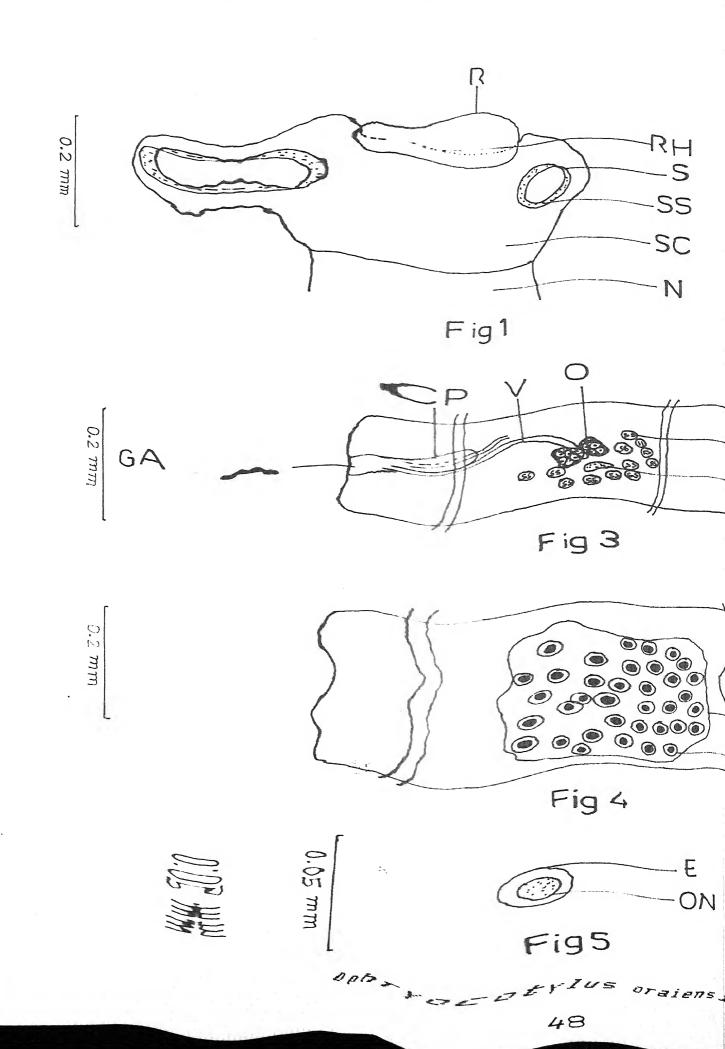
	Scolex with neck (10x10)
F19 2	Rostellar hooks (10x45)
7133	Mature proplottid (10×10)
Fig 4	Gravid proglottid (10x10)
The state of the s	Sac (10x45)

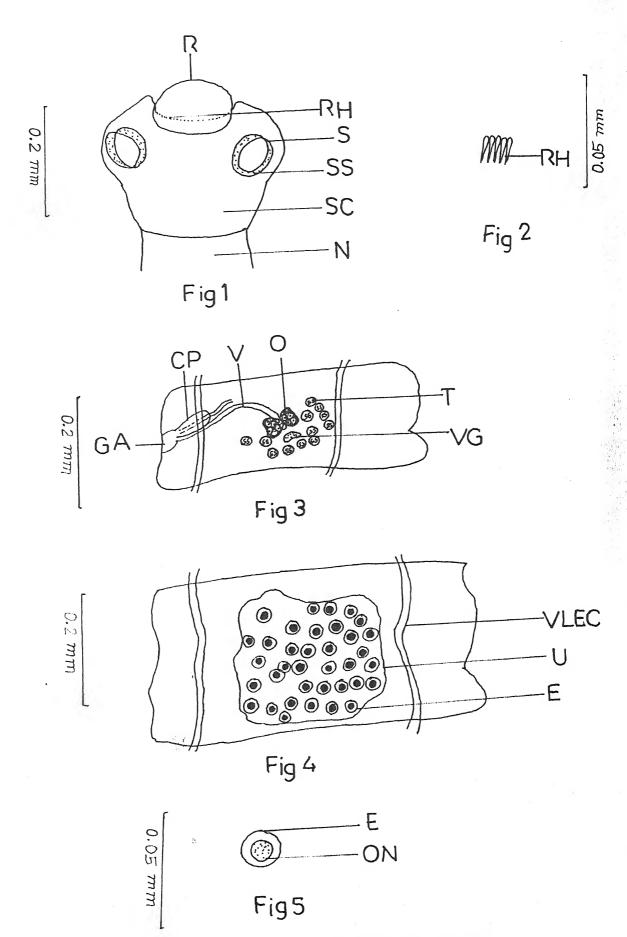
Abbreviations: - CP. cirrus pouch; E. egg; GA. genital atrium: N. neck; O. overy; ON. onchospheres: R. rostellum: RH. rostellar hook; S. aucker; SC. scolex; BS. sucker spine; T. testes; U. uterus; V. vagina; VP, vitalline gland: VLEC, ventral longitudinal excretory canal.

Schryocotylus oraiensis n. sp.

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Fig 1	Scoley make	
-	Saplex with neak	(ioxio)
	Rostellar hooks (	1 Charles
Fig 3		
	Mature proglottid	(IOvin:
Fig 4		
F-10-	Gravid proglottic	diowton
Fig 5	599 (10x45)	

Abbreviations: - CP. cirrus pouch; E. egg; GA. genital strium: N. neck: O. overy: ON. onchospheres: R. rostellum: RH. rosteller book: S. sucker: SC. scolex: SS. sucker spine: T. testes: U. uterus; V. vegina: VG. vitelline gland: VLEC, ventral longitudinal excretory canal.





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Ophryocotylus oraiensis n.sp.

Family - Davaineidae Fuhrmann, 1907

Subfamily - Ophryccotylinae Fuhrmann, 1907

Senus - Ophryocotylus Srivastav et Capcor. 1982

Species - Gohryocotylus prasadii n. sp. (Fios. 1-5, PP 56 )

One out of four desimyna, Acridotheres tristis(L) examined at Rakea Distt. Jhansi (U.P.) herboured single cestode in its small intestine. Morphological studies of the cestode revealed them belong to the genus Ophryocotylus Srivastav et Capoor, 1982; subfamily Ophryocotylinae Fuhrmann, 1907; family Davaineidae Fuhrmann, 1907.

Cestods measures 103 cm. in length and 0.852 in maximum breadth seen in mature proplettids. Proglettids usually broader than long and craspedots.

Scolex well demarcated from the neck. Scolex measures 0.215x0.181. Suckers oval to round, armed neasure 0.108-0.115x0.035-0.048 (0.111x0.042).Sucker spines arranged in 3-5 rows, 0.001-0.003(0.002) in length. Rostellum disc shaped measures 0.048x0.055. Rostellum bears 170-180 rostellar hooks, arranged in a single row. Rostellar hooks measure 0.011-0.0144 (0.0132) in length.

Neck measures 0.870x0.144. Immature proglottids measure 0.024-0.108x0.210-0.660 (0.066x0.435); mature

oroglottide measure 0.228-0.270x0.720-0.852 (0.249x0.786) and gravid proglottids measure 0.210-0.264x0.594-0.810 (0.237x0.702).

Testes 19-40, oval to round, completely surrounds the female genitalia and do not reach upto the Ventral longitudinal excretory canals. Testes measures 0.012-0.024x0.012-0.024 (0.018x0.018). Cirrus pouch club shaped measures 0.102-0.144x0.054-0.072 (0.102x0.063), crosses the ventral longitudinal excretory canal. Internal and external seminal vesicles absent.

measure 0.066-0.091x0.102-0.138 (0.078x0.120). Vitalline gland postovarian measures 0.012-0.024x0.030-0.048 (0.018x0.039). Vagina measures 0.006-0.012 (0.009) in diameter, opens posterior to cirrus pouch in the genital atrium. Recaptaculum seminis measures 0.048-0.078x0.0121-0.031 (0.066x0.021).

Senital atrium measures 0.042-0.078x0.018-0.061 (0.041x0.037) deep and wide respectively. Senital pores unilateral, located in the posterior half of the proplottid margin.

O.468 (O.147xO.411). Uterus never reaches the ventral longitudinal excretory canals. Eggs measures 0.015-

0.024x0.015-0.024 (0.021-0.021). Onchospheres measure 0.009-0.021x0.009-0.022 (0.015x0.016).

Ventral longitudinal excretory canals measures
0.006-0.015 (0.011) in a diameter.

#### Discussion

The present form comes closer to Ophryocotylus dinopii Srivastav etCapoor, 1982 and Ophryocotylus oraiensis n. sp. The present form differs from Ophryocotylus dinopiiSrivastav etCapoor, 1982 in having longer worm, narrower scolex, narrower suckers, smaller number of larger rostellar hooks, greater number of smaller testes surrounds the female genitalia which never reaches upto the Ventral longitudinal excretory canals, different shape of ovary, smaller slightly poral, vitelline gland smaller uterus which never reaches up to the ventral longitudinal excretory canals, smaller eggs and location of genital pores. From Ophryocotylus oraiensism. sp. the oresent form differs in having narrower suckers, smaller rostellum, smaller number of larger rostellar hooks, greater number of testes completely surrounds the female genitalia, larger cirrus pouch. irregular shaped wider ovary, larger, vitelline gland larger receptaculum seminis, wider uterus and location of genital pores.

In the light of above discussion the present form

is accommodated as a new species. Ophryocotylus prasadiin. sp.

The new species is named in the honour of a social worker. late Shri D. P. Khare of Raksa. Jhansi. India.

Host : Acridotheres tristis(L)

Habitat : Small intestine

Locality : Raksa, Jhansi.

Holotype : Department of Zoology,

Bipin Bihari (P.G.) College,

Jhansi.

Table E

Comparison of the characters of the species closer to Ophryocotylus prasadii n. sp.

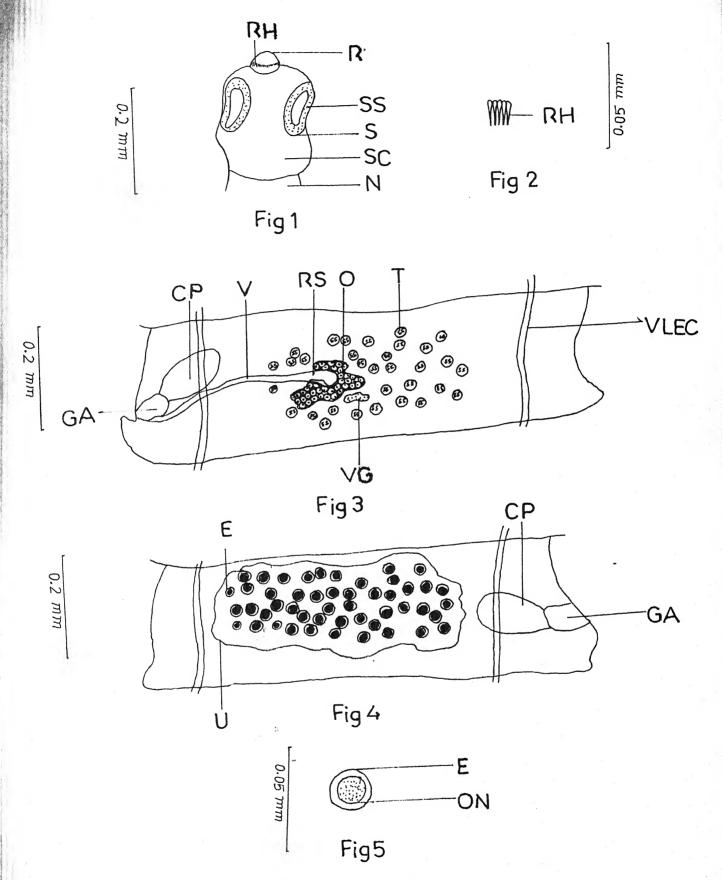
	O.dinopii Srivastav et Capoor, 1982	O. oraiensis n. sp.	O. prasadii n. sp.
Size	20.0-45.0x1.04	80-110x0.648	103×0.852
Scolex	0.207-0.57x0.244-0.532	0.108-0. <i>2</i> 52x0.150-0.3	30 0.216×0.181
Sucker	s 0.095-0.171x0.079-0.152	0.072-0.090x0.054- 0.084	0.108-0.114×0.036- 0.048
Rostel	lum 0.011-0.121x0.57-0.168	0.066-0.075x0.078-0.1	44 0.048x0.055
Rostel No.	lar Hook 120-280	084 190–250	170-180
Size	0.003-0.009	0.009-0.012	0.011-0.0144
Testes No	12-30	10-18	19-40
Size	0.011-0.075x0.011-0.075 arranged in posterolate ral to female genitalia and reached upto VLED	0.012-0.030x0.012- 0.030 arranged in posterolateral to female genitalia & testes of aporal side reaches upto VLCE	0.012-0.024x0.012-0.02 Completely surrounds the female genitalia and do not reach upto VLCE
Cirrus	0.076-0.19x0.022-0.076	0.048-0.090x0.012-	0.102-0.144×0.054-0.072
pouch	never crosses the MLEC	0.042 crosses the VLEC	crosses the VLEC
Ovarv	0.019-0.087x0.045-0.178 lobulated	0.054-0.084x0.024- 0.060 bilobed	0.066-0.091x0.102-0.138 irregular shape

	O.dinopii Srivastav et Capoor, 1982	O. craiensis n. sp.	O. prasadii n. sp.
Vitelli	ne qland   0.017-0.102x0.019-0.121   	0.006-0.018%0.024- 0.042	0.012-0.024x0.030-0.048 slightly poral
Recept aculum	0.026-0.076x0.015-0.045	0.024-0.042x0.006- 0.012	0.048-0.078x0.0121-0.031
seminis Uterus	0.19-0.95x0.361-0.76 reaches upto VLEC	0.144-0.240x0.168- 0.270 never reaches upto VLEC	0.114-0.187x0.354-0.468 never reaches upto the VLEC
Eqc) .	0.015-0.046x0.015-0.046	0.008-0.020x0.0080- 0.0193	0.015-0.024x0.015-0.024
Genita. pore	l Located in anterior 1/3 rd of the proglottid margin.	Located in the middle of the proglottid margir.	Located in the posterior half of proglottid margin.

# Ophryocotylus prasadii n. sp.

Fig 1	Scolex with neck	(10×10)
Fig 2	Rostellar hooks	(10×45)
Fig 3	Mature proglottid	(10×10)
Fig 4	Gravid proglottid	(10×10)
Fig 5	Egg ·	(10×45)

Abbreviations: - CP. cirrus pouch; E. egg; GA. gential atrium; N, neck; O, ovary; ON, onchosoheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucker; SC, scolex; SS, sucker spine; T, testes; U; uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.



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Ophryocotylus prasadii n.sp.

Family - Davaineidae Fuhrmann, 1907

Subfamily - Ophryocotylinae Fuhrmann, 1907

Genus - Ophryocotyloides Fuhrmann, 1920

Species - Ophryocotyloides choprai n. sp.

(Figs. 1-5, PP 63 )

Out of eleven Rugel. Anthus novaeseelandia (Gmelin), examined at Jhansi, four were found infected with the eight cestodes in their intestines. The morphological studies revealed them to belong to the genus Ophryocotyloides Fuhrmann, 1920 subfamily Ophryocotylinae Fuhrmann, 1907; family Davaineidae Fuhrmann, 1907.

Cestodes measure 48.0-54.0 (51.0) in length and 1.110 in maximum breadth as seen in the gravid proglottids. Froglottids broader than long and craspedote.

Scolex measures 0.120-0.0192x0.168-0.270 (0.156x0.219). Suckers armed, oval to round measures 0.054-0.090x0.030-0.072 (0.072x0.051). Sucker spines measure 0.0032-0.0048 (0.041) in length, arranged in 4-6 rows. Rostellum oval or disc shaped measures 0.072-0.096x0.114-0.192 (0.084-0.153). Rostllum bears 210-280 (245) rostellar hooks, arranged in two alternating rows, each row measure 0.0048-0.0080 (0.0064) in length.

Neck measures  $0.870-0.972\times0.198-0.216$  (0.921-0.207). Immature proplettids measure  $0.024-0.048\times0.228-0.372$  (0.036-0.301), mature proplettids, measure  $0.054-0.096\times0.396-0.570$  (0.075 $\times0.483$ ) and gravid proplettids measure  $0.042-0.096\times0.690-1.110$  (0.069 $\times0.911$ ).

Testes 18-30 (24) in number, oval to round lateral to female genitalia. Testes measures 0.006-0.015x0.009-0.021 (0.011x0.015) and do not extend beyond the limits of ventral longitudinal excretory canals. Cirrus bouch oval to club shaped, measure 0.048-0.066x0.012-0.030 (0.057x0.021), not reaching upto the poral ventral longitudinal excretory canal. Internal and external seminal vesicles absent.

Female genitalia slightly aporal. Ovary bilobed measures 0.012-0.030x0.054-0.084 (0.0211x0.070). Vitelline gland compact, postovarian, 0.004-0.009x0.012-0.024 (0.007x0.018). Vagina posterior to cirrus pouch measure 0.006-0.012 (0.009) in diameter. Receptaculum seminis measures 0.030-0.048x0.006-0.018 (0.036x0.012).

Genital atrium measures 0.018-0.024 (0.021) wide and 0.012-0.015 (0.013) deep. Genital pores unilateral, located in the anterior half of the proglottids margin.

Uterus sac like, persistant measures 0.048-0.072 $\times$ 0.570-0.690 (0.060 $\times$ 0.630), uterus with in the limits of ventral longitudinal excretory canals. Eggs

measure 0.0080-0.0144x0.0080-0.0128 (0.0112x0.0104).

Onchoshperes measure 0.0064-0.0096x0.0064-0.0096

(0.0080x0.008).

Ventral longitudinal excretory canals measure 0.006-0.018 (0.012) in diameter.

## Discussion

A comparison of the present form with the reported species of the genus reveals its closeness to Ophryocotyloides baruasagari Tiwari (Unpublished thesis), 1997; Ophryocotyloides corvorum Gupta and Grewal, 1971; Ophryocotyloides SharmaiGupta and Grewal 1971 and Opryocotyloides Srinagarensis Malhotra and Capoor, 1979.

However, it differs from Ophryocotyloides baruasagari Tiwari, 1987 in having smaller scolex. smaller suckers, lesser number of smaller sucker spines row, greater number of smaller testes arranged in two lateral fields, smaller cirrus pouch, smaller ovary, smaller vitelline gland, presence of receptaculum seminis, smaller eggs and smaller Onchospheres. From Ophryocotyloides corvorum Gupta and Grewal, 1971 in having smaller worms, smaller scolex without spiny surface, greater rows of smaller suckers spines, wider rostellum, larger number of smaller testes, smaller ovary, smaller vitelline gland, absence of internal seminal vesicle, presence of receptaculum seminis.

Smaller eggs and smaller Onchoshperes. From Ophryocotyloides Sharmai Gupta and Grewal, 1971 it differs in having smaller worms, narrower scolex without spiny surface, smaller rostellar hooks, lesser number of smaller testes, smaller cirrus pouch, smaller vitelline gland and absence of internal seminal vesicle. From Ophryocotyloides Srinagarensis Malhotra and Capoor, 1979 it differs in having smaller worms, smaller suckers, larger rostellar hooks, fewer testes in two groups, smaller cirrus pouch, smaller ovary, smaller vitelline gland, absence of internal seminal vesicle.

It is proposed to accommodate the present form as a new species. Ophryocotyloides choprain. sp. The species is named in honour of Dr A.K.Chopra Head of Zoology Department of Gurukul Kangri University, Haridwar (U.P.) India.

Host : Anthus novaeseelandiae (Gmelin)

Habitat : Intentine

Locality : Jhansi

Holotype : Department of Zoology.

Bipin Bihari (P.G.) College,

Jhansi.

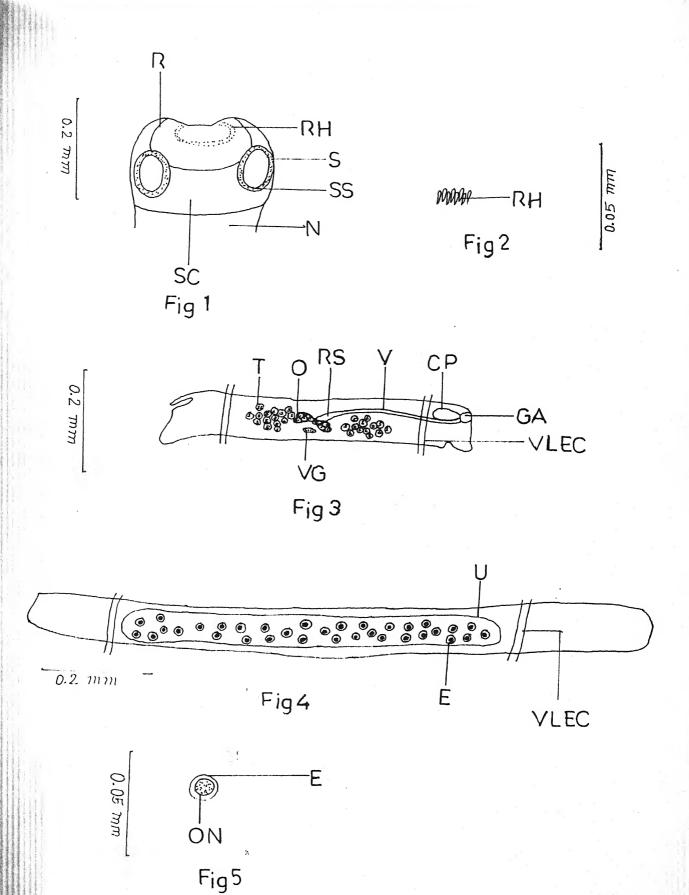
Comparison of the characters of the species closer to Ophryocotyloides chaptain. 39.

	l. barwasagari Tewari 1787	5.cumvorum: Geota and Grawel 1971	C. sharmai Gupts and Grewal 1971	O. sminagan ensis Mal- hotea and Capoon 1979	O.choprai n. ap.
81re Scolex	75-45x1.05 0.01-0.775 0.305-0.45	72-122x1.74 0.17-0.37a 0.27-0.45 eith spiny eurface	0,19x0.74	95-157x2,436 2,14-0,2b: 0,23-0,30	48.0-54.0x1 0.120-0.192x 0.168-0.270
Rostell	8-10 0.008-0.0094	T-4 0.011 0.09-0.14	5-7 0.120	0.108-0.198	4-4 0.003-0.004 0.114-0.192
Floetel! hooks Number Flow Bize	ar 220-240 1 0,006-0.0075	250-300 2 0.014-0.015	300 2 0.012~0.014	200-250 I 0.0135-0.018	210-280 2 0.0048-0.0080
Testes Mumber Size	7-18 0.05-6.06	20-75 0.036-0.045	20-35 0.052-6.072	25-51 0.007-0.058	12-30 0.006-0.015x 0.009-021
Annang ement	posterclateral i to finale geri tilia	s 2 groupe	In 2 groups	in single group	in 2 groups
Cirras Pazain	0,0 <del>9</del> -0,12x0,0445 0,05	- 6,10 <b>6</b> -0,125x 0,045-0,047	0.12-0.13x 0.034-0.03s	0.021-1.453x : 0.007-0.06	0.048-0.0 <b>56</b> x 0.012-0.030

### Ophryocotyloides choprai n. sp.

Fig 1	Scolex with neck	(10×10)
Fig 2	Rostellar hooks	(10×45)
Fig 3	Mature proglottid	(10×10)
Fig 4	Gravid proglottid	(10x10)
Fig 5	Egg	(10×45)

Abbreviations :- CF. cirrus pouch; E, egg; GA. genital atrium: N, neck; O, ovary; ON. onchospheres: R, rostellum; FH, rostellar hook; FS. receptaculum seminis; S, sucker: SC, scolex; SS. sucker spine; T, testes; U, uterus; V, vagina; VG, vitalline gland; VLEC, ventral longitudinal excretory canal. pa



Ophryocotyloides choprai n.sp.

Family - Davaineidae Fuhrmann, 1907

HSubfamily - Davaineinae Braun, 1900

Genus - RaillietinaFuhrmann, 1920

subgenus - RaillietinaFuhrmann, 1920

Species - Raillietina (Raillietina) jabalpurensish.sp.

(Figs. 1-5, FF 71 )

Two, out of eleven domestic fowls, Gallus gallus (Linnaeus), harboured twelve cestodes in its intentines. Morphological studies of the cestodes revealed them to belong to the subgenus Raillietina Fuhrmann, 1920 of the genus RaillietinaFuhrmamm 1920; subfamily Davaineinae Braun, 1900 and family Davaineidae Fuhrmann, 1907.

Cestodes measures 15-22.2 cm in length and 1.275 in maximum width as seen in the gravid proglottids. Proglottids broader than long and craspedote.

Scolex measures 0.148-0.228x0.124-0.146 (0.188x0.135). Suckers four, armed, oval shaped measure 0.116-0.140x0.048-0.050 (0.129x0.049). Suckers bear 3-4 rows of sucker spines measure 0.012-0.024 (0.018) in length Rostellum broader than long measures 0.020-0.024x0.060-0.066 (0.022x0.063). Rostellar hooks 210-230 (220) in number arranged in two alternate rows. Rostellar hooks measure 0.0076-0.0112 (0.0104) in length.

Neck prominent measures 2.380-2.720x0.068-0.119

(2.550x0.093). Immature proglottids measure 0.017-0.255x0.119-0.341 (0.136-0.230); mature proglottids measure 0.153-0.595x0.510-1.191 (0.374x0.851) and gravid proglottids measure 0.646-0.935x0.935-1.275 (0.791x1.105).

Testes 13-21 (17) in number, oval to spherical and surrounds the female genitalia within the limits of ventral longitudinal excretory canals. Testes measures 0.024-0.060×0.024-0.060 (0.042×0.042). Vas deferens much coiled measures 0.009-0.024 (0.016) in diameter. Cirrus pouch oval to club shaped measures 0.108-0.144×0.018-0.072(0.126×0.045) not reaches upto the poral ventral longitudinal excretory canal. Internal and external seminal vesicles absent.

Female genitalia situated in the middle of the proglottid or slightly poral. Dvary lobulated measures 0.024-0.084x0.108-0.216 (0.054x0.162). Vitelline gland compact, postovarian measures 0.012-0.036x0.072-0.120 (0.024x0.096). Vagina measures 0.010-0.024 (0.017) in diameter. Vagina opens posterior to the cirrus pouch in the genital atrium. Seceptaculum seminis measures 0.062-0.120x0.024-0.060 (0.096x0.042), situated at the proximal end of vagina.

Genital atrium measures 0.010-0.024 (0.017) deep and 0.014-0.036 (0.025) wide. Genital openings unilateral located in the anterior half of the proglottid margin.

Uterus replaced by egg capsules. Egg capsules
measures 0.086-0.248x0.048-0.240 (0.167x0.144). Each
egg capsule contains 3-7 eggs. Eggs measure 0.0120.028x0.012-0.036 (0.024:0.018). Onchospheres measure
0.009-0.014x0.009-0.014 (0.012).

Ventral longitudinal excretory canals measure 0.012-0.048 (0.030) in diameter.

### Discussion

The present form comes closer to Raillietina (Raillietina) allomyodes (Kotlan, 1921) Fuhrmann, 1924; Raillietina (Raillietina) angusta Ortlepp, 1963; Raillietina (Raillietina) daetensis Tubangai & Masilungen, 1937; Raillietina (Raillietina) gendrei (Joyeux, 1923) Fuhrmann, 1924; Raillietina (Raillietina) michaelseni Baer, 1925; Raillietina (Raillietina) peradenicaSawada, 1957 and Raillietina (Raillietina) vogeliHilmy 1936.

The present form differs from R. (R.) allomyodes (Kotlan, 1921) Fuhrmann, 1924 in having larger worms, narrower scolex, narrower suckers, greater number of sucker spines, greater number of smaller rostellar hooks and greater number of testes. From R. (R.) angustaOrtlepp, 1963 in having larger worms, narrower neck, narrower scolex, narrower suckers, lesser number of sucker spines, narrower rostellum, lesser number of smaller rostellar hooks, smaller cirrus pouch, lesser

number of testes and greater number of egg capsules. From R. (R.) daetansisTubancai & Masiluncen. 1937 in narrower having narrower worms, narrower scolex, sucker, lesser rows of sucker spines, narrower rostellum, oreater number of smaller rostellar hooks, smaller cirrus pouch, greater number of smaller testes. From R. (R.) gendrei(Joyeux, 1923) Fuhrmann, 1924 in having narrower worms, narrower suckers, smaller sucker spines, narrower rostellum, smaller cirrus pouch, greater number of larger testes and larger number of eggs per egg capsule. From R. (R.) michaelseni Baer, 1925 in having wider worms, narrower scolek, narrower suckers, lesser rows of larger sucker spines, narrower rostellum, lesser number of smaller rostellar hooks, longer cirrus pouch, wider testes and greater number of eggs per egg capsule. From R. (R.) peradenica Sawada, 1957 in having narrower worms, narrower neck, narrower scolex, narrower suckers, greater rows of sucker spines, narrower rostellum greater number of testes, lesser number of eggs per egg capsule and smaller onchospheres. From R. (R.) vogeliHilmy, 1936 in having narrower worms, narrower neck, narrower narrower suckers, lesser rows of smaller sucker spines, narrower rostellum, lesser number of smaller rostellar hooks, smaller cirrus pouch and smaller eggs.

In the light of the above discussion it is proposed to accommodate the present form as a new

species, Raillietina (Raillietina) jabalpurensism. Sp.

Host : Ballus gallus(L)

Habitat : Intestine

Locality : Jabalpur (M.F.)

Holotype : Department of Zoology,

Bipin Bihari (P.S.) College, Jhansi

TABLE 5

Comparison of the characters of the species closer to Raillietina (R.) Jabalpurensis n. sp.

		myod lan,	les (Kot- , 1921) -mann,	R. (R.) angu sta Ortlepp, 1963	daoten sis Tuban gai &	(Joyeux.	ani Rapr	sawada,		R. (R.) jabalpur ensis n. sp.
Later and the second	Sr tobila	L		100-200 mm 6801000	175 mm 3700	120 mm 1500	100-223 mm 270-820	230 mm 1500-2200	20 mm 2090	15-22.2 cm 1.275
The second district	Neck	W		200-240	pre1	. <del>-</del>		270	290	0.0680.119
STATE TO SERVICE	Scolex	W	255	270-300	400	**	260-420	580	380-470	144-176
Annua - serie Children		n D	78	70-150	90-100	80-85	75	117-149	165-190	0.048-0.050
-Arrange and Chamberland	Sucker	R	,,	Several	6-7	_	5-8	7-10	20	3-4
	Spine		***	bad less is som a sum or	11.5-14	14	8		10	0.012-0.024
		L	_	75	130	75	80	104-149	180	0.060-0.066
	Rost	**************************************	000	200	190	<b>E10</b>	200-300	200	150-200	210-230
	hook	N	160-200	2	2	-	2	2	2	
		R				9-10.5	12.8-16.	5 12	35-37	0.0076-0.0112
	Cir.Po	ıch L	17-18 120-150	9 150-180 × 45-50	170-200 x 60-70	170-200	к 87-114 х	312	200 x 8	0.108-0.144 x 0.018
	Testas	him.	12-16		12-15	11-13	14-22	17-25	16-22	13-21
		MO.	. j w	pary .	60-95		40	-	Ann	60
	Size		6-7	2-5	4-8	6-8	4-6	5-9	3-6	3-7
	Egg/Ca	ιρ.	0-7	<u>.</u> .					42	12-36
	Egg.		**	-	_	25-3(		<b>1</b> 000		
	Oncho	spheres	ā <del>-</del>	-		12-1	5 15.2	20	10-1	7 7 74
Committee was	Em. h	ook L			-	-		8	-	- <b>-</b>

Raillietina (Raillietina) jabalpurensis n.sp.

Fig 1	Scolex with neck	(10×10)
Fig 2	Rostellar hooks	(10::45)
Fig 3	Mature proglattid	(5x10)
Fig 4	Gravid proglottid	(5x10)
Fig 5	Ego capsule	(10×45)

Abbreviations :- CP, cirrus pouch; E, egg; EC, egg; CR, capsule; GA, genital atrium; N, neck; 0, ovary; CN, onchospheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucter; SC, scolex; SS, sucker spine; T, testes; V; vagina; VD, vas deferens; VB, vitelline gland; VLEC, ventral longitudinal excretory canal.

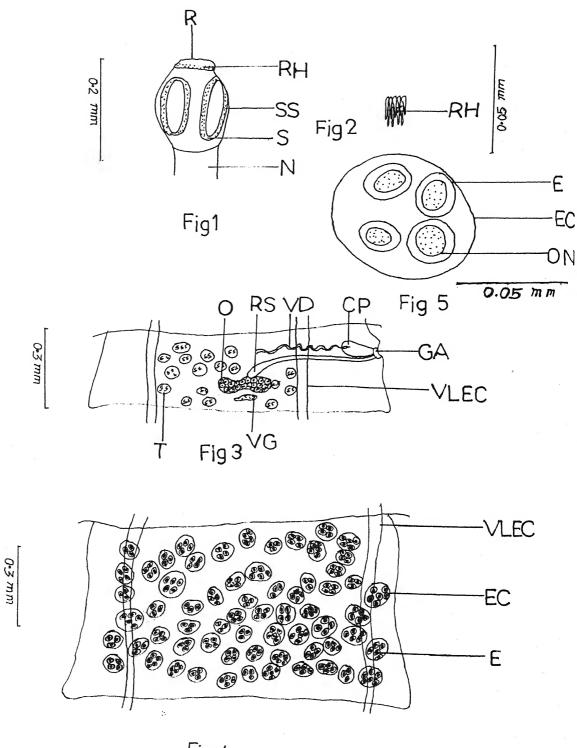


Fig 4
Raillietina (Raillietina) jabalpurensis n.sp.

Family - Dilepididae Railliet etHenry, 1909

Subfamily - Dipylidiinae Stiles, 1896

Genus - ChosnotsenisRailliet, 1896

Species - Choanotaania sonotiMukherjee, 1764 (Figs. 1-5, PF 76 )

examined at Jhansi (U.P.) four were found infected with twenty two cestodes in its intestines. The morphological studies of the cestodes revealed them to belong to the genus ChoanotaeniaRailliet, 1976 of the subfamily Dipylidinae stiles, 1876; famliy Dilepididae Railliet etHenry, 1909.

Cestodes measures 62-98 in length and 0.930 in maximum breadth as seen in mature proglottide. Proglottide craspedote. Mature proglottide broader than long and gravid longer than broad.

Scolex neasures 0.150-0.326x0.120-0.376

(0.273v0.238). Suckers four, oval to round measure

0.180-0.258x0.090-0.170 (0.219x0.140). Rostll\_m

measures 0.078-0.12(.0.042-0.034 (0.102x0.053),

Rostellum previded with 13-16 rostellar books, arranged

in single row. Rostellar books measures 0.0450-0.0560

(0.0520) in length. Fach rostellar book contains a

bandle, 0.0272-0.0388 (0.0230): s guard, 0.0032-0.0040

(0.0036) and a blade, 0.0240-0.0256 (0.0248) in length.

Neck prominent measures 0.450-0.540x0.180-0.290 (0.501x0.240). Immature proglottide measure 0.018-0.294x0.246-0.407 (0.156x0.324); mature proglottide measure 0.477-0.510x0.504-0.930 (0.471x0.717) and gravid proglottide measure 0.450-0.540x0.414-0.642 (0.495x0.528).

Testes 14-21 (17) in number oval to round, posterior to ovary measures 0.018-0.042x0.030-0.046 (0.036x0.048), which never extend beyond the limits of the ventral longitudinal excretory canals. Cirrus pouch club shaped measure 0.054-0.084x0.018-0.042 (0.069x0.030) which never reaches upto ventral longitudinal excretory canal. Internal and external seminal vesicles absent.

Female genitalia single and medial. Ovary bilobed measures 0.030-0.096x0.222-0.373 (0.066x0.297). Vitelline gland post ovarian measures 0.012-0.042x0.042-0.132 (0.027x0.087). Receptanulum seminis absent. Vagina measures 0.006-0.012 (0.009) in diameter.

Genital atrium measures 0.012-0.024 (0.018) in deep and 0.018-0.030 (0.024) wide. Senital openings irregularly alternate located in the anterior half of the proglottids margin.

Uterus breaks into egg capsules. Egg capsule measures 0.0160-0.0224x0.0175-0.0256 (0.0192x0.0216),

extend laterally beyond the limits of the ventral longitudinal excretory canals. Each egg capsule contains single egg measuring 0.0076-0.0160x0.0076-0.0144 (0.0128x0.0120). Onchoshperes measure 0.128-0.0144x0.0128-0.0144 (0.0136-0.0136).

Ventral longitudinal excretory canals measure

0.004-0.018 (0.012) in diameter.

### Discussion

A comparison of the present form with the reported species of the genus Choanotaenia Railliet 1876 reveals it to represent Choanotaenia sonoti Mukherjee, 1764. The minor differences between the numbers of rostellar hooks, genital organs, location of genital pore. The above description of the form which in author's opinion resembles closely with the description of Choanotaenia sonotiMukherjee.

Hence this is detailed description of Choanotaenia sonotiMukherjee 1964.

Host : Gallus gallus(L)

Habitat : Intestine

Locality : Jhansi

Holotype : Department of Zoology,

Bipin Bihari (P.G.) College,

Jhansi. (U.P.)

Choanotaenia sonotiMukherjee, 1964

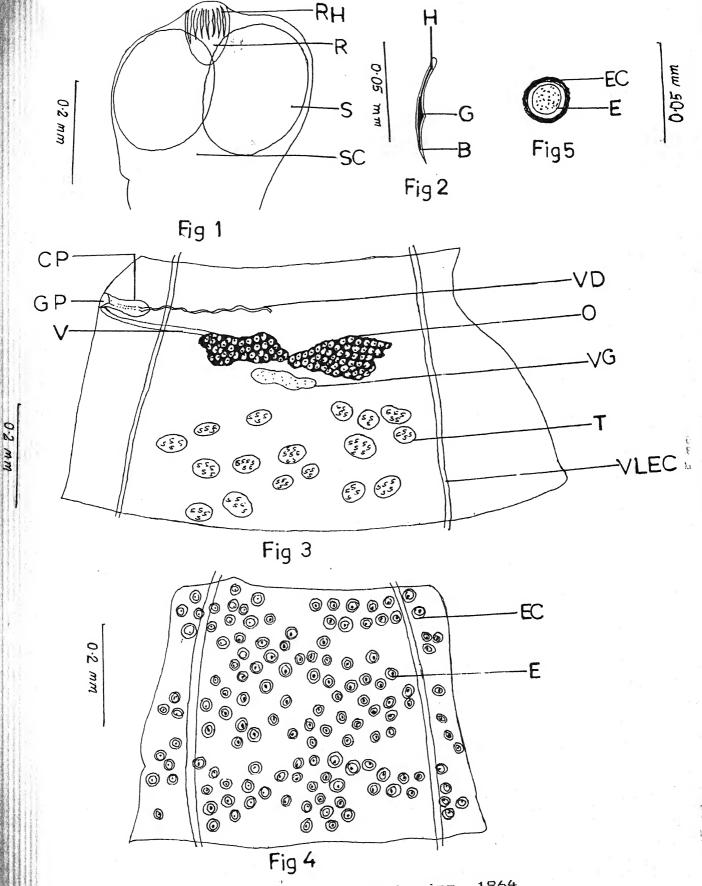
Fig 1	Scolex	(10%10)
Fig 2	Rostellar hook	(10×45)
Fig 3	Mature proglottid	(10×10)
Fig 4	Gravid proglettid	(10x13)
Fig 5	Egg capsul	(10-A=)

Abbreviations :- B, blade; CF, cirrus pouch; E, egg; EC, egg capsule; G, guard; SP, genital pone; M, reck; D, ovary; R, rostellun; RH, rostellar hook; FS, receptaculum seminis; S, sucker; SC, scloex; T, testes; V, vagins; VD, vitelline deferens; VB, vitelline gland; VLEC, ventral longitudinal excretory canal.

Choanotsenia sonotiMukherjee, 1964

Fig 1	Scolex	(10):10)
Fig 2	Rostellar h	pok (10×45)
Fig 3	Mature prog	lottid (10×10)
Fig 4	Gravid progl	lottid (10:10)
Fig 5	Egg capsul	(10:45)

Abbreviations :- B, blade; CP, cirrus pouch; E, egg; EC, egg capsule; G, guard; GP, genital pone; M, rock; O, ovary; R, rostellum; RH, rostellar book; RS, receptaculum seminis; S, sucker; SC, scloex; T, testes; V, vagina; VD, vitalline deferens; VB, vitalline gland; VLEC, ventral longitudinal excretory canal.



Choanotaenia sonote Mukhurjee, 1964 76

Family - Dilapididae Railliet et-Henry, 1909

Subfamily - Dilepidinae Fuhrmann, 1907

Genus - Jalpain.g.

Species - Jalpai sipriensish. Q., n. sp.

(Figs. 1-5, PP 84 )

Nine little grebs, Podiceps ruficollis (P) were examined at Barauasagar, District Jhansi (U.F.), two were found infected with three cestodes. Morphological studies of the cestodes revealed them to belong to the genus Jalpai n.g. of the subfamily Dilepidinae Fuhrmann, 1907 and family Dilepididae Railliet et Henry, 1909.

Jalpai n.g.

Generic diagnosis

crgans per proglottid. Scolex with four unarmed suckers. Rostellum bears a single circle of rostellar hooks. Neck absent. Testes numerous in two groups. Cirrus pauch crosses the ventral longitudinal excretory canals. Internal seminal vesicles present. External seminal vesicles present. External seminal vesicle absent. Cirrus armed. Benital pores opens in anterior half of the proglottid margin. Ovary bilobed vitelline gland postovarian, compact. Uterus sac like extend beyond the limits of ventral longitudinal excretory canals. Parasites of aquatic birds.

### Jalpai sipriensian.g., n. sp.

Cestodes measures 140-154 in length and 3.060 in maximum width as seen in gravid proglottids. The strobila consists of a large number of craspedate and broader than long proglottids.

Scolex measures 0.476-0.509-0.704-0.936
(0.502×0.791). Suckers measure 0.159-0.169.0.195-0.218
(0.164-0.207). Armed rostllum longer than broad
measures 0.378-0.471×0.322-0.351 (0.435×0.337).
Rostellum bears 17 large rustellar hooks, arranged in single row. Rostellar hooks measure 0.764-0.283 (0.276)
in length. Rostellar hooks contain a handle, 0.1680.180 (0.174); a blade, 0.084-0.108 (0.096) and a guard
0.012-0.024 (0.018) in length.

Neck absent. Immature proglottids measure 0.017
0.051x0.731-0.952 (0.034x0.842); mature proglottids

measure 0.034-0.561x.986-2.975 (0.451x1.980) and gravid

proglottids measure 0.681-1.270x1.981-3.060

(0.981x2.521).

Genitalia double per proglottid. Testes 32-60 in number, oval to round distributed in two groups within the limits of the ventral longitudinal excretory canals. Testes measures 0.034-0.068x0.034-0.085 (0.051x0.050). Cirrus pouch cylindrical measures 0.340-0.935x0.034-0.204 (0.637x0.119), crosses the ventral

neasure 0.153-0.356x0.015-0.170 (0.255x0.110). External seminal vesicles seminal vesicle absent. Cirrus prominent measures 0.068-0.589x0.017-0.152 (0.329x0.095), cirrus spines in 8-18 rows measures 0.0042-0.0126 (0.0084) in length.

Female genitalia double per proglottid. Ovary two, bilobed measure 0.034-0.065×0.085-0.168 (0.049×0.0127). Vitelline glands post ovarian measure 0.017-0.034×0.018-0.061 (0.026×0.039). Vagina measures 0.021-0.036 (0.029) in diameter, opens posterior to cirrus pouch in the genital atrium. Receptaculum seminis measures 0.060-0.096×0.017-0.060 (0.078×0.039).

Genital atrium measures 0.048-0.159 (0.104) deep and 0.060-0.169 (0.112) wide. Genital opening bilateral located in the anterior half of the proglottid margin. Male and female organs present only in anterior proglottids.

Uterus sac like measures  $0.5590-0.675\times1.119-1.890$   $(0.617\times1.505)$ , extend beyond the limits of the ventral longitudinal excretory canals: Eggs measure  $0.016-0.042\times0.018-0.039$   $(0.029\times0.029)$ . Onchospheres measure  $0.012-0.018\times0.012-0.018$   $(0.014\times0.014)$ .

Ventral longitudinal excretory canals measure 0.012-0.036 (0.024) in diameter.

### Discussion

The present worms on the basis of circle of rostellar hooks, number of Proglottids, disposition of testes and shape of uterus vary from the other general of the family Dilepididae Railliet etHeory, 1909. But comes slightly closer to MirandulaSandars, 1956.

It differs from MirandulaSandars, 1756 in having larger worms, single circle of rostellar hooks, strobila consisting of numerous segments, numerous testes in two groups, cirrus pouch crosses the poral ventral longitudinal excretory canal, absence of internal seminal vesicle, different location of genital pores, bilobed ovary, uterus sac like and parasites of birds.

In the light of above discussion it is proposed to accommodate the present form as a new genus Jalpain.g. and a new species, Jalpai sipriensish.g., n. sp.

The genus is named after Shri Jalpa Frasad Srivastava eminent social worker of Amethi district Sultanpur (U.P.) India.

Host : Fodiceps ruficollis(F)

Habitat : Intestine

Locality : Barwasagar, Jhansi

Holotype : Department of Zoology,

Bipin Bihari (P.G.) College,

Jhansi.

#### Table 6

# Comparison of the characters of the various genera closer to Jalpain.g.

Mirandula**Sandars** Jalpain.g.

Size	Very small worm	Very long worm
Rostellar hook Strobila	Double circle Consisting only a few segments	Single circle Consisting a numerous seg- ments
Testes	Usually in two groups of four, lateral to median line	numerous in single group
Cirrus pouch	Reaching poral canal	Crosses the poral canal

1956

Internal seminal	Absent	Present
vesicle Ovary	Compact, anterior	Bilobed, surrounds
1	to testes	the testes

to testes

Uterus Slightly bilobed Simple sac like	Uterus	Slightly bilobed	Simple sac like
---	--------	------------------	-----------------

# Key to the geners of the sub family Dilepidinae Fuhrmann, 1907

- ta. Two sets of reproductive organs

  per segment, double circle of

  rostellar hooks, a few segments,

  testes in two groups of four,

  cirrus pouch reaches upto porsi

  canal, oteros trans. since sac
- ib. Two sets of reproductive orgnas

  per sagment, single circle of

  rostellar books, numerous seg
  ments, numerous testes in two

  groups cirrus pouch crosses

  the poral canal, uterus tra
  nsverse sac later on simple

  sac like

# Jalpai sipriensian.g., n. sp.

Fig 1	Scolex (5%10)
Fig 2	Rostellar hook (10x10)
Fig 3	Mature proglottid (5x10)
Fig 4	Gravid proglettid (5:10)
Fig 5	Eqq (10945)

Abbreviations :- B, blade; C, cirrus ; DF, cirrus pouch; CS, cirrus spine; E, egg; S, guard; BA, genital strium; H, handle; IVS, internal seminal vesicle; D, ovary; ON, onchospheres; R, rostellum; RM, rostellar hook; RS, receptaculum seminis; S, sucker; SC, eclos; T, testes; V, vagina; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.

## Jalpai sipriensisn.g., n. sp.

Fig	1.	Scolex (5×10)
Fig	2	Rostellar hook (10x10)
Fig	original of the second of the	Mature proglottid (5×10)
Fig	4	Gravid proglottid (5×10)
Fig		Egg (10×45)

Abbreviations :- B, blade; C, cirrus ; CP, cirrus pouch; CS, cirrus spine; E, egg; G, guard; GA, genital atrium ; H, handle; IVS, internal seminal vesicle; O, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucker; SC, scloex; T, testes; V, vagina; U, uterus; V, vagina; VB, vitelline gland; VLEC, ventral longitudinal excretory canal.

Japlai sipriensis n.g., n.sp.

Family - Dilepididae Railliet etHenry, 1909

Subfamily - Dilepidinae Fuhrmann, 1907

Genus - Raksian.g.

Species - Raksia pychonotush.g., n.sp.

(Figs. 1-5, PP 93 )

Two out of six redvented bulbul Pycnonotus cafer (Linn.) examined at Raksa, Distt. Jhansi (U.P.), harboured four cestodes in its intestines. The morphological studies of the cestodes revealed them to belong to the genus, Eaksian.g. and a new species Raksia pycnonotus n.g., n.sp. of the subfamily Dilepidinae Fuhrmann, 1907, family Dilepididae Railliet etHenry, 1909.

# Amended diagnosis of the subfamily Dilepidinae

Internal and external seminal. Vesicles absent.

Testes in two lateral fields. Cirrus unarmed, vitelline gland compact. Uterus persistant, Cenital openings unilateral.

## Raksian.g.

Generic diagnosis: - Medium sized worms, single set of reproductive organs. Proglottids craspedote. Testes numerous in two lateral fields with in the limits of ventral longitudinal excretory canals. Cirrus pouch oval, elongated. Internal and external seminal vesicles

absent. Ovary bilobed. Vitelline gland postovarian genital pores unilateral. Uterus sac like. Parasites of aquatic birds.

Raksia pycnonctusn.g., n.sp.

Cestodes measures 13-17 in length and 0.93 in maximum width. Proglottids broader than long and craspedote.

Scolex measures 0.09-0.195x0.09-0.225 (0.143x0.159). Suckers four, unarmed, oval to round measures 0.075-0.150x0.060-0.135 (0.113x0.098). Rostellum broader than long measures 0.027-0.030x0.09-0.12(0.029x0.11). Rostellar hooks 50-60 (55) in number, arranged in single row. Rostellar hooks measure 0.016-0.024 (0.019) in length. Each rostellar hook contains a handle, 0.0058; a guard 0.0042 and a blade 0.0042 in length.

Neck prominent, measures 0.645-0.825x0.150-0.180 (0.735x0.165). Immature proglottids measure 0.015-0.075x0.15-0.21 (0.045x0.18); mature proglottids measure 0.105-0.225x0.27-0.52 (0.165x0.401) and gravid proglottids measure 0.15-0.22x0.54-0.93 (0.19x0.74).

Testes 15-25 (20) in two lateral fields; Poral group contains 3-7, while aporal group 12-17 measures 0.0075-0.037x0.0075-0.030 (0.02x0.02); extend laterally with in the limits of ventral longitudinal excretory

canals. Cirrus pouch oval measures 0.06-0.09x0.022-0.015 (0.08x0.019), crosses the poral ventral longitudinal excretory sanal. Vas deferens measures 0.045-0.075 (0.060) in diameter. Internal and external seminal vesicles absent.

Female genitalia medial. Ovary bilobed measures 0.045-0.090x0.015-0.060 (0.070x0.038). Vitelline gland compact, postovarian measures 0.015-0.037x0.015-0.030 (0.026x0.023). Vagina measures 0.0075-0.015 (0.011) in diameter, opens posterior to cirrus pouch in the genital atrium. Receptaculum seminis measures 0.022-0.037x0.015-0.030 (0.030x0.023), situated at the proximal end of Vagina.

Genital atrium 0.015-022 (0.019) in deep and 0.015-0.030 (0.023) in wide. Secital openings unilateral, located in the antenion half of the proglattids.

Uterus sac like nessures 0.105-0.725-0.375-0.601 (0.145x0.488), with in the limits of ventral longitudinal excretory canals. Eags measure 0.022-0.06x0.022-0.06 (0.040). Unchospheres measures 0.0024-0.0030 (0.0028).

Ventral longitedinal extratory canals measure 0.015-0.037 (0.076) in diameter.

### Discussion

the family Dilepididae Failliet etHenry, 1909. On the basis of location of paniful atrium, disposition of testes and absence of internal and external seminal vesicles. The present form comes closer to Facudandrya Fuhrmann, 1943 and LateriporusFuhrmann, 1907.

The present form differs from Pseudandrya Fuhrmann, 1943 and LateriporusFuhrmann, 1907 in having different arrangement of testes, absence of internal and external seminal vesicles, unarmed cirrus and sac like uterus.

In the light of above discussion it is proposed to accommodate the present form as a new genus Raksian.g. and a new species, Raksia pycnonotusn.g. n.sp.

Host : Pycnonotus cafer(L)

Habitat : Intestine

Locality : Raksa, Distt. Jhansi (U.P.)

Molotype : Department of Zoology,

Bipin Bihari (P.S.) College,

Jhansi:

Table 7

Comparison of the characters of various genera closer to Rabsian.g.

			me major game door two pilot agree twee
	Pseudandrya Fuhrmann, 1943	Lateriporus Fuhrmann, 1907	Raksia n.g.
Tests	Situated mainly antiporal	Situated mainly postovarian	Situated in two lateral field.
Cirrus	Unarmed	Armed	Unarmed
Uterus	Reticular	Sac Like	Sac Like
Vagina	Posterior to cirrus pouch	Posterior to cirrus pouch	anterior to cirrus pouch

#### Nev to denera in dilecipinae

l a	Two sets of reproductive organs per segment	Muranbula
16	One set of reproductive organs per segment	2 2 3 3 A
2a	Genital pores unilateral	
<b>2</b> b	Genital pores alternating	22
3a	Rostellum lacking	Arctotaenia
3b	Rostellum present	a a a
<b>4</b> a	Genital pores submarginal	5
<b>4</b> b	Genital pores marginal	5
5a	One circle of rostellar hooks,	
	rostellum slightly bifurcated at	tip Trichoceph-
5b	Two circles of rostellar hooks,	
	rostellum not bifurcated .	Vogea
6a	Genital atrium very large, deep and muscular	7
ób	Genital atrium not as above	
7a	Genital atrium complex, with spines, bristles or diverticulae	Neogryporh- ynchus
7b	Genital atrium muscular but not	
	as above	8
Sa	Entire genital atrium muscular	Valipora
85	Benital atrium muscular only	
	at proximal end	Mashonalepis
9а	One circle of rostellar hooks	10
9b	Two circles of rostellar hooks	

10a Testes mainly antiporal uterus reticular	Fseudandrya
10b Testes mainly postovarian uterus sac like	Lateriporus
10c Testes in two fields on lateral side of overy, but not postoverien,	Dakelon e

Company of the compan

# Raksia pychonotush.g. n.sp.

Fig 1	Scolex	(10×10)
Fig 2	Rostellar hooks	(10×45)
Fig 3	Mature proglottid	(10×10)
Fig 4	Gravid proglettid	(10×10)
Fig 5	Egg	(10::45)

Abbreviations :- B, blade; CF, cirrus pouch; E, egg; 6, guard; SA, genital atrium; H, handle; O, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VD, vas deferens; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.

11.

Raksia pycnonotus n.g., n.sp

Family - Dilapididae Railliet etHenry, 1909

Subfamily - Dilepidinae Fuhrmann, 1907

Genus - AmoebotaeniaCobn, 1900

Species - Amoebotaenia gharmauensis n.g., n.sp.

(Figs. 1-6, FF 100 )

Out of seven little grebs, Podiceps ruficollis (Pallas) examined at Gharmau District Jhansi, three were found infected with sixteen cestodes. Castodes were present in the intestine of the host. The morpological studies of the cestodes revealed them to belong to the genus AmoebalashiaCohn, 1900 of the subfamily Dilepidinae Fuhrmann, 1907; family Dilepididae Faillie! atHenry, 1909.

Castodes are small in size measuring 3.1-4.0 mm in length and 0.840 in maximum width as seen in the mature proglottids. Proglottids extremely craspedate, broader than long.

Scoles measures 0.108-0.150-0.126-0.210 (0.127x0.169), well denarrated from the neck. Suckers inarmed oval to round measure 0.054-0.075x0.042-0.078 (0.075x0.060). Essiellen elongated, cylindrical necks 0.094-0.126x0.024-0.042 (0.105x0.033). Rostellar hooks 16-20 in number, arranged in a single row. Rostellar hooks measures 0.0095-0.0144 (0.0120) in length. Each rostellar hook bears a short handle,

0.0016-0.0032 (0.0020); a guard 0.0064-0.0096 (0.0080) and a blade 0.0064-0.0096 (0.0080) n length.

Neck prominent measures 0.005-0.018x0.144-0.192 (0.012x0.168). Immature proglottids measure 0.006-0.018x0.096-0.132 (0.012x0.114); mature proglottids measure 0.012-0.096x0.198-0.840 (0.054x0.519) and gravid proglottids measure 0.108-0.126x0.222-0.288 (0.117x0.255).

Testes 5-9 in number, oval to spherical posterior to ovary. Testes measures 0.012-0.024×0.012-0.024 (0.018×0.018). Cirrus pouch oval measures 0.080-0.138×0.036-0.054 (0.109×0.045), reaches upto the mid of the proglottids width cirrus provided with two rows of spines. Cirrus spine measure 0.033-0.041×0.0008-0.003(0.037×0.002). Internal seminal vesicle measures 0.030-0.048×0.006-0.021 (0.039×0.013) and external seminal vesicle measures 0.057×0.021).

Female genitalia median. Cvary measures 0.012-0.024x0.054-0.072 (0.018x0.063). Vitelline gland compact, postovarian measures 0.006-0.012x0.012-0.018 (0.009x0.015). Vagina measures 0.006-0.009 (0.008) in diameter, opens posterior to the cirrus pouch in the cenital atrium. Receptaculum seminis measures 0.024-0.036x0.006-0.012 (0.030x0.009), located at the proximal end of the vagina.

Genital atrium measures 0.006-0.012 (0.009) deep and 0.024-0.036 (0.030) wide. Senital pores alternating regularly located in the anterior half of the proplettids margin.

Uterus persistant, sac like measures 0.060-0.084x0.108-0.132 (0.072x0.120), within the limits of ventral longitudinal excretory canals. Uterus first appears as two sacs and later

on into single one eggs. Eggs measures 0.0128-0.0144×0.0144-0.0150 (0.0135×0.0152). Onchospheres measure 0.0064-0.0095×0.0064-0.0096 (0.0080×0.0080).

Ventral longitudinal excretory canals measure 0.006-0.012 (0.007) in diameter.

## Discussion

The present form comes closer to Amoebotaenia
Lumbrici (Villot, 1883) Joyex et Sear, 1939;
Amoebotaenia madrasiensisDixit and Capoor, 1931 and
Amoebotaenia yamasigi Yamaguti, 1956.

Immbrici (Villot, 1883) Joyex etBear, 1939 in having longer worms, narrower rostellum, larger number of smaller rostellar hooks, smaller testes. From Ampebotaenia madrasiensisDixit and Capoor, 1981 the present form differs in having longer worms, narrower scolex, narrower rostellum, larger number of smaller

testes, wider cirrus pouch and smaller eggs. From Amoebotsenia yamasigi Yamaguti, 1956 the present form differs in having larger vorms, smaller rostellar books, smaller testes and smaller eggs.

In the light of shove discussion it is proposed to accommodate the present form as a see species, Amoebotassia pharmaceasian up.

Host : Fodicers refinallis (Pallas)

Habitat : Intestine

Locality : Ghachas, Jhansi (U.P.)

Holotype : Department of Zoology

Bipin Bihari (F.S.) College,

Jhansi.

Table 8

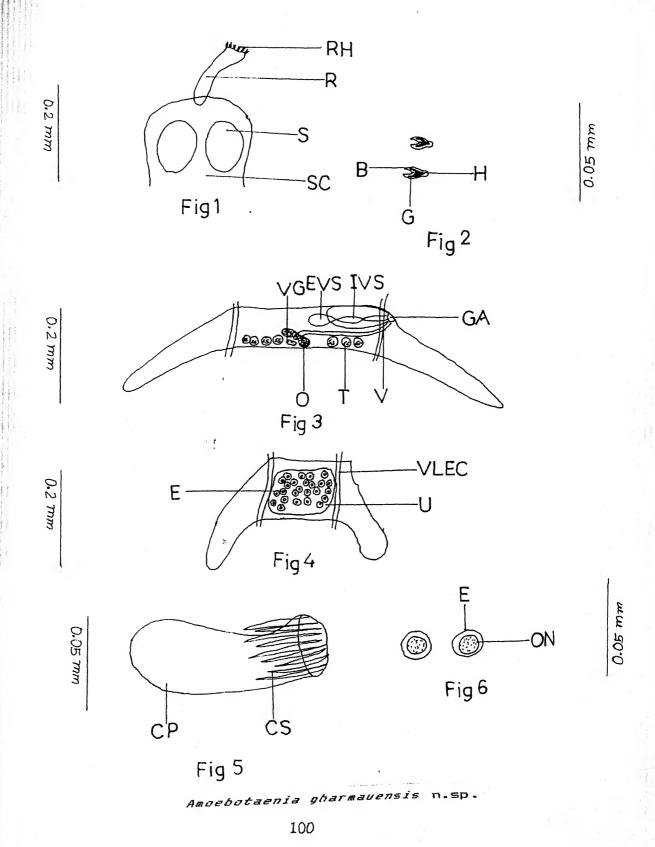
Comparison of the characters of the species closer to Amoebotaenia gharmauensism. sp

Species	Size	e Skolex Width	Rostallu Width		Rostellar hooks	i francis	ates Ci	rrus pou	<b>:</b> h:	Egg
	li dan ayan dikan dika dika dikan di	Herrical Control Control (4) of the Special Section (4)	· · · · · · · · · · · · · · · · · · ·	No	Length	i Nc	Size		Exten	sion
A.lumbrici (Villot,186 Jbyex et		0.71-0.25	0.07~0.1	16	0.081- 0.072	7-10	0.003		Past	
Mar, 1939										
A.madra siensis Dixit & Capcor,1981	2.4		0.07-0.125	14 16		9-12	0.048× 0.013	0.05- 0.097x - 0.018 0.034	negj.	0.027- 0.035x 0.024 0.034
A.yamasigi Yamaquti, 1956			1	15-1	8 0.075- 0.084	<i>6</i> −10	o. <b>045</b>		beyond	0.03x 0.091
A. gharmau ensien. sp.				67-20	0.0096y 0.0144					

# Amoebotaenia gharmadensish. sp.

Fig	- E	Scolex (10:10)
Fig	2	Rostellar hooks (10x45)
Fig	3	Mature proglottid (10×10)
Fig	<u> </u>	Gravid proglattid (10x10)
Fig	=	Cirrus pouch with cirrus spines (10:10)
Fig	ź	Egg (10×45)

Abbreviations :- B, blade; CF, Lirrus court; CS, cirrus spines; E, egg; EVS, external seminal vesicle; 6, guard; GA, genital atrium; H, handle; IVS, internal seminal vesicle; C, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.



Family - Dilepididae Railliet etHenry, 1909

Subfamily - Dilepidinae Fuhrmann, 1907

Genus - AmoebotaeniaCohn, 1900

Species - Amoebotaeniavimleshii n.g., n.sp.

(Figs. 1-5. PP 108 )

Out of four tufted pochard, Aythya fuliquia (Linn.) examined at Baruwasagar, Jhansi (U.P.). one was found infected with three specimens of the present form in the duodenum of the host. The morphological studies of the cestodes revealed them to represent Amoebotaenia Cohn, 1900 of the subfamily Dilepidinae Fuhrmann, 1907; family Dilepididae Railliet etHenry, 1909.

Cestodes are small in size 3.5-5 in length and 0.870 in maximum width as seen in the matur proglottids. Proglottids extremely craspedote and broader than long.

Scolex measures 0.456-0.516x0.648-0.720 (0.486x0.684), well demarcated from the neck. Suckers unarmed, oval to round measure 0.168-0.240x0.108-0.150 (0.204x0.129). Rostellum measures 0.289-0.301x0.448-0.456 (0.295x0.452). Rostellum bears 24-30 (27) rostellar hooks in number arranged in single row. Rostellar hook measure 0.0832-0.1008 (0.0920) in length. Each rostellar hooks contain a handle, 0.0496-0.0608 (0.0552); a guard, 0.0240-0.0282 (0.0261) and a blade, 0.0336-0.0401 (0.0368) in length.

Neck measures 0.045-0.072x0.126-0.156 (0.060x0.141). Immature proplettids measure 0.024-0.054x0.090-0.330 (0.039x0.210): mature proplettids measure 0.054-0.090x0.396-0.870 (0.072x0.633) and gravid proplettids measure 0.168-0.210x0.390-0.690 (0.189-0.540).

Testes 7-13 in number. oval to spherical measures 0.012-0.036x0.018-0.042 (0.024x0.030), posterior to ovary. Cirrus pouch measures 0.048-0.090x0.018-0.042 (0.069x0.030), crosses the poral ventral longitudinal excretory canal. Internal and external seminal vesicles absent.

Female genitalia median. Ovary bilobed measures 0.006-0.042x0.054-0.096 (0.024x0.075). Vitelline gland compact, postovarian measures 0.006-0.012x0.012-0.030 (0.009x0.024). Vagina opens to cirrus pouchin genital atrium measures 0.004-0.012 (0.008) in diameter. Receptaculum seminis 0.018-0.036x0.006-0.018 (0.027x0.012), located at the proximal end of the vagina.

Genital atrium measures 0.006-0.018 (0.012) deep and 0.006-0.020 (0.014) wide. Senital openings alternate regularly, located at the anterior half of the proglottid margin.

Uterus sac like within the limits of ventral longitudinal excretory canals measures 0.132-

0.180x0.330-0.456 (0.156x0.393). Eggs measures 0.0112-0.0193x0.0128-0.0193 (0.0152x0.0160). Onchospheres measure 0.0064-0.0112x0.0064-0.0112 (0.0088x0.0088).

Ventral longitudinal excretory canals measure 0.006-0.018 (0.012) in diameter.

## Discussion

The present form comes closer to Amoebotaenia capoori Srivastava and Srivastav; 1987 Amoebotaenia fuhrmanni Tseng. 1932; Amoebotaenia indica Srivastava et al. 1983; Amoebotaenia pekinensisTseng. 1932 and Amoebotaenia vanellifuhrmann. 1907.

The present form differs from A. capoori Brivastava and Srivastav. 1987 in having longer worms. wider scolex. Greater number of larger rostellar hooks. smaller number of testes, smaller cirrus pouch and smaller eggs. From A. fubrmann: Tseng. 1932 the present. form differs in having narrower worms, wider rostellum. greater number of larger rostellar hooks, greater number of larger testes. larger cirrus bouch do not extend upto ventral longitudinal excretory canal of appral side. From A. indicaSrivastava et al 1983 the present form differs in having wider worms, greater number of larger rostellar hooks. lesser number of smaller testes, smaller cirrus pouch which crosses the ventral longitudinal excretory canal and smaller eggs. From A pekinensisTseng, 1932 the present form differs in having larger worms, wider scolex, wider rostellum,

preater number of larger rostellar hooks, lesser number of smaller testes, smaller cirrus pouch and smaller eggs. From A. vanelliFuhrmann, 1907 the present form differs in having longer worms, wider scolex, wider rostellum, greater number of larger rostellar hooks. lesser number of smaller testes and smaller cirrus pouch.

In the light of above discussion it is proposed to accommodate the present form as a new species, Amoebotaenia vimleshiin. sp.

Host : Aythya fuligula(Linn.)

Habitat : Duodenum

Locality : Baruwasagar, Jhansi.

Holotype : Department of Zoology

Bipin Bihari (P.G.) College, Jhansi

Comparison of the characters of the species closer to Amoebotaenia vimleshiin. sp.

Table 9

	Siza	Scloax width	Rosta 11um					Cirrus Size	Fouch exte- nsion	<u> </u>
	y - 1864 - 2864 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1884 - 1	haasaying gaar dead taken dala ber a heed	width	No	length	No	Size	nan ngah mga nisin aktor cipin take naktor	and the same and the same is an order	a index statut statut statut index
A capoori 1 Srivastava and Srivas tav, 1987	.8-2.2x 1.273	0.15- 0.248	0.06-	10-12	0.021- 0.048	11-	0.05 0.02	0.073- 4x 0.117 2- 0.02 <b>9</b> 2 0.058	X -	0.035x 0.015-
A,fuhrmanni Tseng, 1932		0.22	0.58	10	0.07	12-18	0.01	2- 0.044 2 0.05	- Disp 2 lace to a cral side	ed D
A.indica Srivastava etal, 1983	4.0x	-	•	12	0.03- 0.033	12- 16	0.04- 0.05	0.12x 0.01-	chin to po	ea- 0.028- g up 0.025- ral 0.025- 0.028
A.pekinansi Taeng, 1932	<b>э</b> 3.0к ! 0.374	0.285x 0.467	0.079	16	0.054- 0.061	12-	0.06	- 0.1- 8 0.19	Past	0.048
A.vanilli Furhmann, 1987		0.16	0.091	15	0.046- 0.050	- 12- ) 19	0.04 3.0	8-0.1- 56 0.30		••
Alvonieshi n. sp.	i3.5-5.0x 6.270	0.443- 0.720	0.448- 0.456	24+30	0.0832 0.100	- 7- B 13	0.03	- 0.048 6x 0.09 9x 0.01	e-	0.017

Table 10

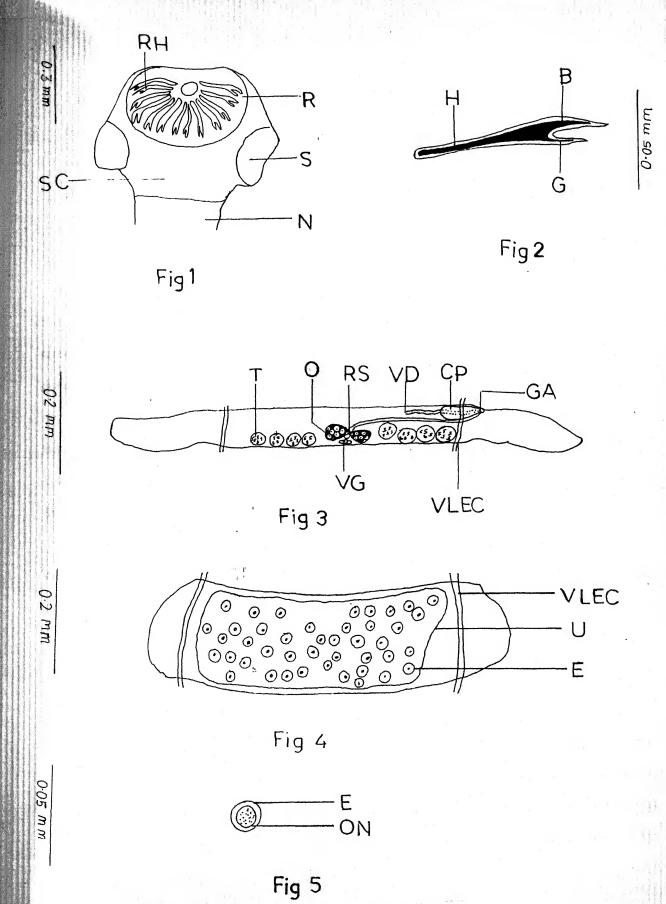
Companison of the characters of Ambebotaenia charmacensism.sp. and Ambebotaenia vimleshii n. sp.

		The state of the s
Academic Aca	A. gharmavensis n. sp.	A. vimleshii n. sp.
Size	J. 109-4, 006x0, 840	<b>3.5.5</b> 0.970
Scolex	0.45 <u>6</u> -0.516x0.648-0.720	6, 109-6, 150x0, 125-6, 210
Acretellum	0.034-0.12680.02480.042	o. 337-o. 301 do. 448-o. 154
Foatellar No	hooks	<u> 24-30</u>
Length Testes	o. 0096-0. 0144	0.0832-0.1008
<b>为复</b> 为	The same of the sa	7-13
Size	0.012-0.024x0.012-0.024	0.012-0.036x0.018-0.042
Cirrus po Size	xxdh 0.080-0.138x0.036-0.054	0.048-0.090:0.018-0.042
en bereiter	: Cross the poral VLED	reaches upto the middle of the proglattics
Ecas	0.0 <b>129-</b> 0.0144x0.0144- <b>0.0</b> 150	0.0122-0.0193+0.0138-0.0193

# Amoebotaenia vimlesniin. sp.

Fig 1	Scolex with neck	5:100
Fio 2	Rostellar hook	6. <b>1</b> * G : 2 = 4 = 7
Fig 3	Mature prograttia	f fagtiga i
Fig 4	Gravid prodictio	t Bajasa gajak
Fio 5	Eag	the state of the state of

Abbreviations: - B. blade: EP cirrus obuch: E. egg: 6, guard: GA. genital atrium: H. handle: N. neck: 0, ovary: ON. onchospheres: R. rostellum: RH. rostellar hook: RS, receptaculum seminis: S. sucker: SC. scolex: T. testes: U. uterus: V. vagina: VD. vas deferens: V6, vitelline gland: VLEC, ventral longitudinal excretory canal.



Amoebotaenia vimleshii n.sp.

Family - Dilepididae Railliet etHenry, 1909

Subfamily - Dilepidinae Fuhrmann, 1907

Genus - Laterotestinan.g.

Species - Laterotestina newarensism.sp.

(Figs. 1-5, PP 117 )

Out of four little grebs, Podiceps ruficollis (Pallas) examined at Niwari, District Tikamgarh (M.F.), one was found infected with single specimen of the present from in the intestine of the host. The morphological studies of the cestode revealed them to belong to the genus Laterotestinan.g. of the family Dilepididae Railliet et Henry, 1909; subfamily Dilepidinae Fuhrmann, 1907.

# Amended diagnosis of the genus Laterotestina family Dilepididae

Small size worm, with a single crown of large rostellar hooks, proglottids extremely craspedote and broader than long, testes numerous in two lateral fields to female glands. Cirrus pouch very short, ovary bilobed and each lobe further lobulated. Internal and external seminal vesicles absent, genital openings alternate regularly, uterus sac like. Parasite of aquatic birds.

## Laterotestinan.g.

## Generic diagnosis :-

Small size worms with few segments, armed rostellum present with single circle of rostellar hooks. Suckers unarmed, neck absent, proglottids extremely craspedote, broader than long. Testes in two lateral fields to female genitalia, cirrus pouch not reaching upto the poral ventral longitudinal excretory canal. Internal and external seminal vesicles absent, ovary bilobed each lobe further lobulated. Vitelline gland postovarian, genital atrium very small, genital opening alternate regularly, Uterus sac like with many out growths extending beyond the limits of Ventral longitudinal excretory canals.

Laterotestina newarensisn.g., n.sp.

Cestodes measure 21 cm in length and 3.720 in maximum width as seen in the mature proglottids. Proglottids extremely craspedote, broader than long.

Scolex measures 0.408x0.748. Suckers four, unarmed, oval to round measure 0.084-0.120x0.072-0.144 (0.102x0.108). Rostellum measures 0.410x0.504. Rostellum provided with 16-20 rostellar hooks, arranged in a single row. Rostellar hooks measure 0.108-0.138 (0.123) in length. Each rostellar hook contains a handle, 0.066-0.078 (0.072); a blade, 0.042-0.054

(0.048) and a guard 0.042-0.060 (0.053) in length.

Neck absent. Immature proglottids measure 0.144-0.192x0.576-2.880 (0.168x1.728); mature proglottids measure 0.144-0.264x2.640-3.720 (0.204x3.180) and gravid proglottids measure 0.528-0.960x2.520-3.001 (0.744x2.760).

Testes 40-65 in number, oval to round, arranged in two groups on each side of female genitalia. Each poral and aporal groups contains 19-30 and 21-34 testes respectively. Testes measures 0.012-0.048x0.012-0.048 (0.030x0.030). Cirrus pouch oval measures 0.132-0.192x0.036-0.072 (0.162x0.059), never crosses the ventral longitudinal excretory canals. Internal and external seminal vesicles absent.

Female genitalia median, Ovary lobulated measures 0.024-0.108×0.168-0.312 (0.066×0.240). Vitelline qland postovarian measures 0.012-0.036×0.041-0.120 (0.024×0.096). Vagina posterior to cirrus pouch measure 0.012-0.030 (0.021) in diameter, open into the genital atrium. Receptaculum seminis measures 0.084-0.108×0.012-0.030 (0.096×0.021).

Genital atrium measures 0.024-0.072x0.060-0.084 (0.048x0.072) wide and deep respectively. Genital pores alternate regularly, located in the anterior half of the proglottid margin.

Uterus sac like with numerous out growths crosses the ventral longitudinal excretory canals. Uterus measures 0.336-0.624x1.800-2.424 (0.480x2.112). Eggs measure 0.0145-0.0203x0.0145-0.0174 (0.0174x0.0159). Onchospheres measure 0.0058-0.0116x0.0058-0.0116 (0.0087x0.0087).

Ventral longitudinal excretory canals measure 0.012-0.030 (0.021) in diameter.

#### Discussion

On the basis of disposition of testes the present form comes closer to Amoebotaenia Cohn. 1900 and BakererpesRausch. 1947.

The present form differs from the genus Amoebotaenia Cohn, 1900 in having the extremely craspedote proglottids, genital atrium without bristles, disposition of testes, smaller cirrus pouch which never crosses the ventral longitudinal excretory canal, different shape of ovary and uterus with numerous outgrowths. From BakererpesRausch, 1947 in having smaller genital atrium without spines different disposition of testes, smaller cirrus pouch which never crosses the ventral longitudinal excretory canal different shape and disposition of ovary and uterus with numerous out growths.

In the light of above discussion it is proposed to accommodate the present form as a new genus, Laterotestina and a new species, Laterotestina newarensisn.g., n.sp.

Host : Podiceps ruficollis(Pallas)

Habitat : Intestine

Locality : Niwari, Distt. Tikamgarh (M.P.

Holotype : Department of Zoology

Bipin Bihari (P.G.) College,

Jhansi

Table 11

Comparison of the dramacters of the various general closer to new genus Laterotestinan.g.

	Proglottids	- Carrital strium	Texatess	Cirrus, pouch	Ovray	Uterus
Ancebotaenia Cahn, 1900	Craspedote or not	Atrium maj have loog bristles	Tester few (4 to 20) un single brans.verse row poster- ior to ovary	poudh eidhav ascular	trans- : versely elonga- tod	n immegum Lan sac
Party 1947	Wider than long, stron- gly conves on poral side	Atrium Large with muscular walls lined with small spires	Testes poetent ion fo evany	Cirrus pouch very large at least re aching median line of segment.	*	
Laterote stina n.g.	extremely craspedote	Atrium small and normal	Testes numerous ancerged in two lateral fields		Oyany isilobed each lobed further kobulate	140

Table 11

Comparison of the characters of the various general closer to new genus Laterotestinan.ç.

	Proglottida	Genital atrium	Tems bases	Cirrus pouch	Ovray	Liftenruss
<b>Ancebo</b> taenia <b>Cohn</b> , 1900	Craspedote or not	Atrium may have long bristles	Testes few (6 to 20) in single transverse row poster ior to overy	polefi extrav accular	trace- versely elonga- ted	n innægur lan sæc
Bakerenpes Rausch, 1947	Wider than long, stron- gly conves on poral side	Atrium large with muscular walls lined with small spines	Testers postar- ion to ovary	Cinrus  pouch  very  lange at  least re  aching  madian  line of  segment.	•	
Laterote stina n.g.	extremely craspedote	Atrium small and cormal	Testes numerous annanged in two latensi fields		Ovany bilobed each Lobed further lobulate	Sac like with num erous cut growths

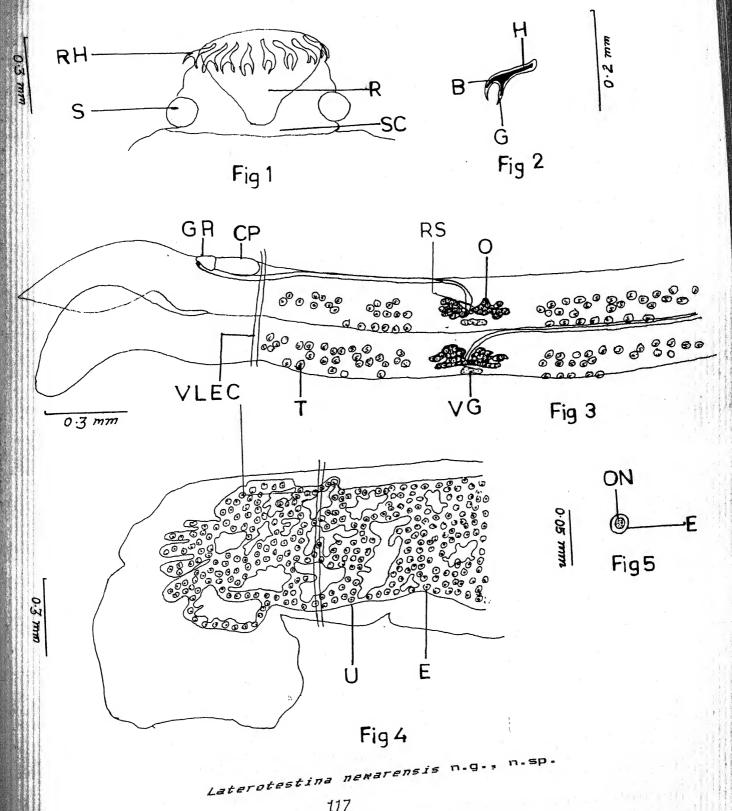
# KEY TO THE GENERA IN DILEPIDINAE

1a.	Two sets of reproductive organs per segment	Mirandula
<b>45.</b>	One set of reproductive organs per segment	2
2a.	Genital pores unilateral	3
2b.	Genital pores alternatino	22
22a.	Rostellum lacking	23
22b.	Rostellum present armed or not	25
25a.	Rostellum unarmed	26
25b.	Rostellum armed	28
28a.	Genital pores alternating regularly	29
286.	Genital pores alternating irregularly	y 37
29a.	One circle of rostellar hooks	30
295.	Two circles of rostellar hooks	32
30a.	Rostellum elongate, capable of	
	being coiled within rostellar sac	
306.	Rostellum not capable of being	
	coiled within rostellar sac	31
31a.	Genital duct passing between osmore-	
	gulatory canals. Testes in postovari	an
	cluster	Bakererpes
31b.	Genital ducts dorsal to osmoregulator canals. Testes in single, posterior r	y owAmoebot -aenia
31c.	Genital ducts crosses the osmorequilat canals Testes in two lateral fields	ory Later-

# Laterotestina newarensish.g., n.sp

Fig	1	Scolex (5×10)
Fig	2	Rostellar hook (10×10)
Fig	3	Mature proglottid (5×10)
Fig	4	Gravid proglottid (5:10)
Fig	5	Egg (5x45)

Abbreviations: - B, blade: CP, cirrus bouch: E. egg; 6, guard: GA, genital atrium: H, handle: D. bvarv: ON, onchospheres; R, rostellum: RH, rostellar hook: RS, receptaculum seminis; S, sucker: SC, scolen: T. testes: U, uterus: V, vagina: VG, vitelline cland: VLEC, ventral longitudinal excretory canal.



Family : Dilepididae Railliet et Henry, 1909

Bubffamily: Dilepidinae Fuhrmann, 1907

Genus: Vireshwarin.g.

Species : Vireshwari baruasagarensisn.g, n.sp.

(Figs :1-5 ;pp- 126 )

Out of seven little grebes, Podiceps ruficollis (pallas), examined at Baruagar, District. Jhansi (U.P.) three were found infected with seventeen cestodes. The cestodes were present in the intentines of the host. The morphological studies of the cestode parasites revealed them to belong to the new genus Vireshwari n.g. of the Subfamily Dilepidinae Fuhrmann, 1907; family Dilepididae Railliet et Henry, 1909

# Amended diagnosis of the Subfamily. Dilepidinae

Proglottids extremely craspedote, smaller genital atrium, cirrus unarmed. Internal and external seminal vesicles present. Testes preovarian in two dorsolateral fields.

## Vireshwari n.g.

Generic diagnosis : Small sized worms proplettid extremely craspedete, preovarian testes in two dersolateral fields, larger cirrus puch in the anterior half of the proglettid. Internal and external seminal vesicles present, genital pores altarnate

regularly. Ovary bilobed slightly poral. Vitelline gland postovarian. Uterus with regular sac. Parasites of aquatic birds.

Vireshwari baruasagarensisn.g, n.sp.

Cestodes measure 4-7 in length and 0.528 in maximum width as seen in the gravid proglottids. proglottids extremely craspedote, broader than long. Scolex measures 0.078-0.096x0.144-0.162(0.087x0.153). well demarcated from the neck. Suckers unarmed, oval to round measure 0.054-0.072×0.042-0.054 (0.063×0.048). Rostellum protruded, cylindrical measures 0.078-0.090x0.012-0.024 (0.084x0.018). Rostellar hooks 10-12 in number, arrenged in a single row. Rostellar hooks measure 0.0128-0.0160 (0.0144) in length. Each rostellar hooks bear a short handle 0.0032-0.0040 (0.0036); guard 0.0076-0.0112 (0.0104) and blade, 0.0104-0.0112 (0.0108) in length. Neck measure 0.018-0.030x0.054-0.084(0.024x0.070). Immature proglottids measure 0.006-0.018x0.084-0.168(0.012x0.112); mature proglottids measure 0.078-0.096x0.186-0.301 (0.087x0.243) and gravid proglottids measure 0.168-0.216x0.258-0.528 (0.192x0.393).

Testes 15-22 in number, oval to round, preovarian in two dorsolateral fields. Testes measures 0.004-

0.012x0.004-0.009 (0.008x0.0070).Cirrus pouch measures
0.042-0.084x0.024-0.036(0.063x0.030), crosses the

poral ventral longitudinal excretory canal. Internal

seminal vesicle measures0.018-0.030x0.0060.015(0.024x0.012); external seminal vesicle measures
0.030-0.060x0.006-0.030 (0.045 x 0.018).

Female genitalia median. Ovary slightly bilobed measure 0.006-0.012x0.024-0.042 (0.009x0.033). Vitelline gland compact, postovarian measures 0.006-0.009x 0.012 -0.024 (0.008x0.018). Vagina measures 0.006-0.006 (0.007) in diameter, opensposterior to cirrus pouch in the genital atrium. Receptaculum seminis measure 0.012-0.024x0.006-0.012 (0.018x0.009).located at the proximal xx end of the vagina.

Genital atrium measure 0.006-0.018 (0.012) in depth and 0.011-0.023 (0.018) in width . Genital pores alternate regularly located in the anterior half of the proglottids margin.

Uterus persistant, Sac like measures 0.126-0.168x0.186-0.222 (0.147x0.204), with in the limits of ventral longitudinal excretory canals. Eggs measure 0.0096-0.0128x0.0070-0.0128 (0.012x0.009).Onchospheres measure 0.0048-0.0080x0.0048-0.0080 (0.0064x0.0064).

Ventral longitudinal excretory canals measure 0.006+0.012 (0.009) in diameter.

#### Discussion

According to Schmidt, 1986 the cestodes belong to the family Dilepididae Railliet et Henry, 1909 On the basis of genital ducts, seminal vesicles, disposition of testes and arrangement of uterine sacs. It comes closer to BakererpesRausch, 1947 and AmoebotaeniaCohn. 1900.

The present form differs from the Eakererpes Rausch. 1947 in having a longer rostellum. genital ducts not passing between osmoregulatory canals, preovarian testes in two dorsolateral field. Smaller genital atrium, unarmed cirrus and presence of internal and extrenal seminal vesicles. From Amoebotaenia Cohn, 1900 it differs in having preovarian testes in two dorsolateral fields, larger cirrus pouch, bilobed ovary and uterus with regular sac.

In the light of the above discussion the present form is accommodated as a new genus and a new species, Vireshwari baruasagarensish.g.,n.sp.

The genus is named after prof. (Dr.) V.N.Capoor an eminent Indian cestodologist.

Host -Podiceps ruficollis(pallas)

Habitat - Intestine

Locality - Baruasagar, Jhansi. (U.P.)

Holotype - Department of Zoology,

Bipin Bihari (P.G.) College,

Jhansi.

Table - 12

# Comparison of the charaters of the Various genera closer to new genus Vireshwari n.g.

	Proglattide	. Testes	Cirrus pouch	Seminal vesicle	14	Uterus
Bakererpes Rausch, 1947	Trapezoidal, wider than long, strongly convex on pore side	Testes numerous posterior to female gland.	Armed abs cirrus larger cirrus pouch.	een t	5 i. lobed	uterus a lange sac
Amoebo-	Proglottida	Testes	Cirrus	****	Transver	Uterus
taenia cohn, 1900	craspedote or not	few posterior to ovary in single transverse row	poweh		sely elongated	an irregular sac
Viresh- wari n.g.	Proglottids extremely craspedate	Testes few preovanian in two dorsolate- nal fields	,	Internal and externa seminal versicle present	bilobed 1 small	Uterus as regular sac.

# Key to the genera of the subfamily Dilepidinae

la.	Two sets of reproductive		
	organs per segment.	1	1irandula
1b.	One set of reproductive		
	organs per segment.	# # W	2
2a.	Genital pores unilateral	es. 48. 29	3
2b.	Genital pores alternating	00 et 20	22
22a.	Rostellum lacking	m # #	23
225.	Rostellum present, armed or		
· · · · · · · · · · · · · · · · · · ·	not	171 III <b>6</b> 4	25
25a.	Rostellum unarmed	ns des ess	26
25b.	Rostellum armed.	** 10 8	28
28a.	Genital pores alternating		
	regularly	an 1st 20	29
286.	Genital pores alternating		
	irregularly		37
29a.	One circle of rostellar hooks	a u st	30
29b.	Two circles of rostellar hooks	* * *	32
30a.	Rostellum elongate, capable of		
	being coiled with in rostellar sac	na de as	Taeniarhy- nchaena
30b.	Rostellum not capable being		
	coiled within rostellar sac.		31
31a.	Genital ducts passing between		
	osmoregulatory canals. Testes		
	in a contovarian cluster.		Bakererpes

- 31b. Genital ducts dorsal to

  osmore gulatory canals. Testes

  preovarian in two dorsolateral

  fields. ... Vireshwari n.g.
- 31c. Benital ducts dorsal to

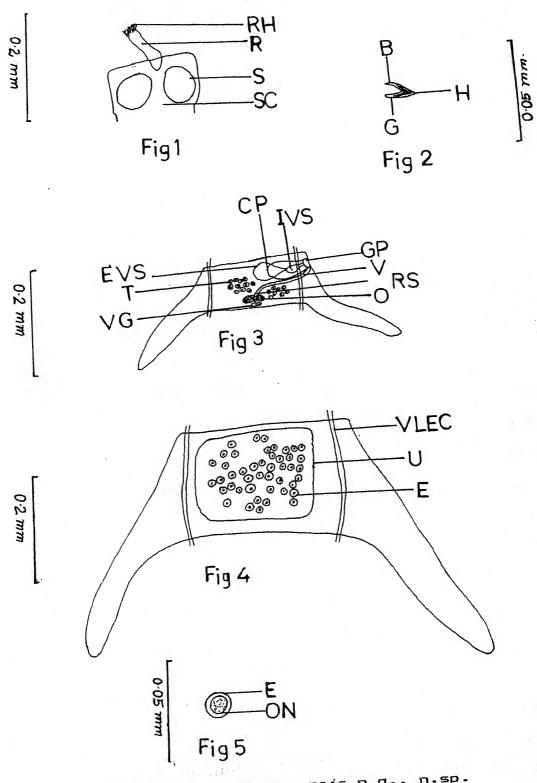
  osmoregulatory canals (between
  them in A setosa, Burt 1940).

  Testes in single, posterior row ... Amoebota
  enia

Vireshwari baruasagarensisn.g.,n.sp.

Fig	1	Scolex (10 x 10)
Fig	2	Rostellar hook ( 10 x 450
Fig	3	Mature proglottid (10 x 10)
Fig	4	Gravid proglottid ( 10 x 10)
Fig	5	Egg ( 10 x 45)

Abbreviations :- B.blade; CP, cirrus pouch; E, eqq; EVS, external seminal vesicle; G, guard; GP, gential pore; H, handle; IVS, internal seminal vesicle; O, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; RS, receptanulum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretary canal.



Vireshwari baru asagarensis n.g., n.sp.

Family : Dilepididae Railliet et Henry, 1909.

Subfamily: Dilepidinae Fuhrmann, 1907.

Genus : Transvertian.g.

Species : Transvertia kareyraensish.g., n.sp.

(Figs. 1-5; pp -134 )

Turdoides Dut of five large grey babbler. malcolmi (sykes) exmined at kareyra District Shivpuri (M.P.) , two were found infected with seven cestodes. The cestodes were obtained in the intestine of the Host. The marphological studies of the cestodes revealed them to belog to the new genus Transvertia not the subfamily Dilepidinae Fuhrmann, 1907; family Dilepididae Railliet et Henry, 1909.

Amended diagnosis of the subfamily Dilepidinae Dilepididae: Testes numerous occupy the whole orbolottid. Ovary transverse tube like in poral side. genital pores irregularly alternate and uterus persistant.

# Transvertia n.Q.

Generic diagnosis : Medium sized worms, scolex with arned rostellum one set of genitalia per whole Testes numerous occupy the proglottid, extend beyond the limits of ventral proglottid. longitudinal excretory canals. Cirrus pouch small. Ovary on poral side, transverse tube like, Uterus persistant. Parasites of birds.

#### Transvertia kareyraensis n.g., n.sp.

Cestodes measure 30-32 cm in length and 0.901 in maximum breadth seen in mature proglottids. Strobila consists of a number of proglottids; Proglottids are broader than long and craspedote.

Scolex measures 0.504 - 0.696 x 0.324 - 0.624 (0.600x0.474). Suckers four, oval to round measure 0.156-0.252x0.156-0.264 (0.204x0.210). Rostellum measures 0.084-0.144x0.084 - 0.120 (0.114x0.102), provided with 6 - 8 rostellar hooks arranged in single row. Rostellar hooks measure 0.0624-0.0688 (0.0656) in length. Rostellar hook contains a handle, 0.0352-0.0384 (0.0368); a blade 0.0282-0.0304 (0.0293) and a quard 0.0064 - 0.0080 (0.0072) in length.

Neck measures 0.3091 -0.481  $\times$  0. 312 - 0.378 (0.435  $\times$  0.354). Immature proglottids measure 0.018 - 0.054  $\times$  0.532 -0.666 (0.036  $\times$  0.599); mature proglottids measure 0.108 - 0.162  $\times$  0.768 -0.900 (0.135  $\times$  0.834) and gravid proglottids measure 0.168 - 0.270  $\times$  0.432 - 0.714 (0.219  $\times$  0.573).

Testes oval to round, 25-48 in number measures  $0.012-0.030 \times 0.012-0.030(0.021\times0.021)$ , distributed in whole proglottids, extend beyond the limits of ventral longitudinal excretory canals. Cirrus pouch small measures  $0.054-0.090\times0.024-0.036$  (0.072x0.030),

neverreaches upto poral ventral longitudinal excretory canal.Cirrus unarmed.Internal seminal and external seminal vesicles absent.

Female genitalia located on the poral side. Ovary measures 0.024-0.036x0.072-0.102(0.030x0.087) transverse tubelike nearly touches the margin anteriorly. Vitelline gland small compact measures 0.012-0.024x0.024-0.030(0.018x0.027).Receptaculum seminis measures 0.036-0.060x0.006-0.024(0.048 × 0.015). Vagina measures 0.006-0.012(0.009) in diameter, opens posterior to cirrus pouch .

Genital atrium measures 0.018 -0.036 (0.027) wide and 0.006-0.027(0.018) deep. Genital pores irregularly alternate and located in the anterior half of the proglottid margin.

Uterus sac like, persistant measures 0.072-0.138x0.150-0.348(0.105x0.249). Eggs measure 0.0096-0.0150(0.0128)in diameter. Onchospheres measure 0.0048-0.0080(0.0064) in diameter.

Ventral longitudinal excretory canals measure 0.006-0.018(0.012) in diameter.

# Discussion

According to Schmidt, 1986 the cestodes belong to the family Dilepididae Railliet et Henry, 1909 On the basis of arrangement of testes, extension of cirrus pouch and location of ovary. The present form comes closer to KrimiBurt, 1944; Laterorchites Fuhrmann, 1932; Polycercus Villot, 1883 and Tubanquiella Yamaguti, 1959.

The present form differs from the genus Krimi purt, 1944 in having disposition of testes, extension of cirrus pouch, absence of vas deferense, disposition and shape of ovary. From LaterorchitesFuhrmann, 1932 it differs in having different disposition of testes, extension of cirrus pouch, shape and position of ovary. From Polycercus Villot, 1883 it differs in having disposition of testes, an unarmed cirrus, different extension of cirrus pouch, absence of vas deferens, shape and disposition of ovary. From Tubanguiella Yamaguti, 1959 it differs having disposition of testes, an unarmed cirrus, different extension of cirrus pouch, absence of vas deferens, shape and position of ovary.

In the light of the above discussion it is proposed to accommodate the present form as a new genus Transvertia n.g. and a new species, Transvertia kareyraensisn.g.,n.sp.

Host : Turdoides malcolmi (Sykes)

Habitat : Intestine

Locality : Kareyra, Shivpuri . (M .P .)

Holotype : Department of Zoology ,

Bipin Bihari (P.G) College, Jhansi.

Table - 13 Comparison of the characters of Transvertia n.g. with other genera

	Tastas	Cirrus armed/ unarmed	Cirrus pauch Extension	Vas deferans	Ovany	uterus
	Testes numer rous,posterior	-	cinnus pouch may choss osmoregulatory canals		compact, anterior	Reticular
	esTestes in 72 two lateral fields.	armed	cross the ventral longitudinal excretory canal.	absent	Compact. posterior	Sac like
Polycercus Villat,1883		aramed	cirrous pouch crosses asmoregulatory canal	present	Gvary median lobated.pre torial	
	i Testes in two 19 groups, anteri- or to overy.		cirrus peuch crosses osmoregulatory canals.	present	ovary bilob large,poste ior	
	Testas in sim- gls field thr- cughout the proplettid		Not reaches the ventral langitudinal excretary canal.	absent	cvary poral transvers tube like n touches the anteriosly	early

## key to the Genera in Dilepidinae

la.	Two sets of reproductive organs per segment.	141	randula
lb.	One set of reproductive organs per segment.	4 K K	2
2a.	Genital pores unilateral		2
2b.	Genital pores alternating	V: A - %	ro, rog an do
22a.	Fostellum lacking	4 4 n	25
225.	Rostellum present.armed or not .		25
25a.	Rostellum unarmed	a de ve	26
25b.	Rostellum armed	А 9. ж	28
28a.	Genital pores alternating regularly.	4 7 %	2 <del>9</del>
28b.	Genital pores alternating irregularly.	₩ -15 A.	37
37a.	One circle of rostellar hooks.	el de de	38
37ь.	Two circles of rostellar hooks.	70 dd dd	44
38a.	Circle of hooks wavy or ziozag	ж п о	39
38b.	Circle of hooks regular	n • •	4 1.
41a.	Ovary posterior. Testes in two lateral fields		Laterorchit
41b.	Ovany about central	e de la	42
3 4 -	Owner antonion tennovones tubo liv	27.41	

41c. Ovany anterior transverse tube like in poral region near the VIEC. ... TransvertiaN.G.

Transvertia Kareyraensisn.o., n.sp.

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Fig. 1 Scolex ( 5 × 10 )

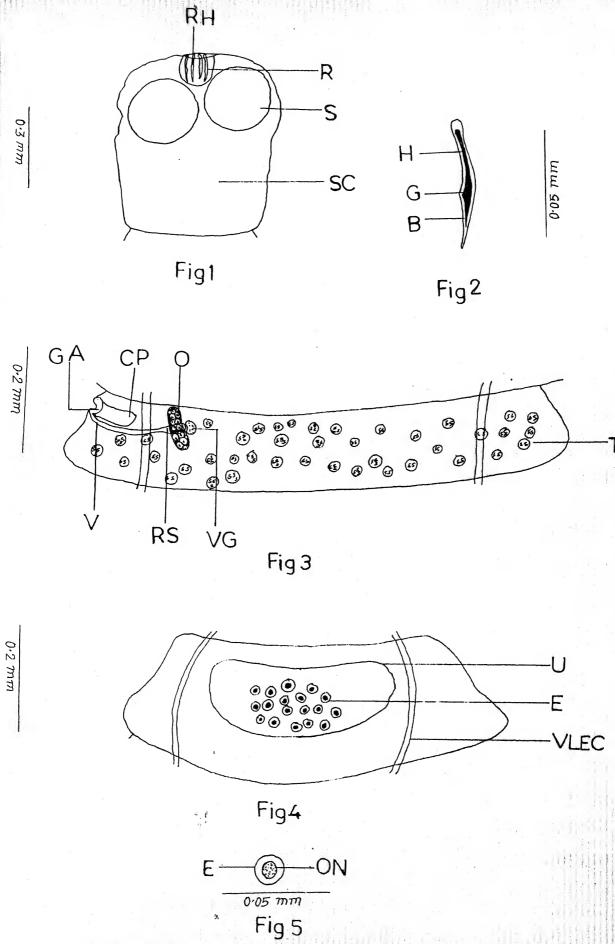
Fig. 2 Rostellar hook (10 × 45 )

Fig. 3 Mature proglottid ( 10 × 10 )

Fig. 4 Gravid proglottid ( 10 × 10 )

Fig. 5 Egg ( 10 × 45 )
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Abbreviations - B, blade: CP, cirrus pouch; E, eqq; 6, quard; GA, genital atrium; H, handle; O, ovary; DN, onchospheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.



Transvertia kareyraensis n.g., n.sp.

Family : Hymenolepididae Raillet etHenery, 1909

Subfamily: Hymenolepidinae Perrier, 1897

Genus : Armadoskrjabinia Spasskii et spasskaja,

1954

Species : Armadoskrjabinia pande n.sp.

(Figs 1-5;pp- 142)

Two, out of five little grebs, podiceps ruficollis (Pallas) examined at Niwari, District Tikamgarh (M.P.) was found infected with twelve tapeworms from its intestines. The morphological studies of the cestodes revealed them to belong to the genus Armadoskrjabinia Spasskii et Spasskaja, 1954 of the Subfamily Hymenolepidinae Perrier, 1897; family Hymenolepididae Railliet etHenry, 1909.

Cestodes measure 50-70 (60) cm in length and 0.540 in maximum width as seen in the mature proglottids. Proglottids broader than long and craspedote.

Scolex measures 0.240-0.289x0.168-0.259 (0.266x0.213). Suckers four, unarmed, oval to round measure 0.030-0.078x0.030-0.078 (0.054x0.054). Rostellum measure 0.072-0.138x0.066-0.108 (0.105x0.087).Rostellum bears 12 hooks, arranged in single row. Rostellar hooks measure 0.0421-0.0512(0.0466)in length. Handle, 0.0208-0.0288(0.0240); quard, 0.0096 - 0.0160 (0.0128) and blade, 0.0160-0.0224(0.0192) in length.

Neck measures 1.201-1.425x0.120-0.222 (1.31x0.171). Immature proglottids measure 0.018-0.054x0.234-0.372 (0.036x0.303); mature proglottids measure 0.072-0.108x0.390-0.540 (0.090x0.465) and gravid proglottids measure 0.048-0.090x0.150-0.210 (0.069x0.180).

Testes three oval to round measures 0.024-0.042x0.030-0.060(0.033x0.045), in a transvers row which never extand beyond the ventral longitudinal excretory canals. Cirrus pouch elongated measure 0.234-0.288x0.012-0.042 (0.261x0.027), extend beyond the middle of the proglottid width. Cirrus armed measure 0.078-0.102x0.006-0.012 (0.090x0.009). Internal and external seminal vesicles absent.

Female genitalia slightly poral. Ovary blobed measures 0.018-0.042x0.054-0.078 (0.030x0.066). Vitelline gland compact, post ovarian measures 0.006-0.012x0.012-0.024 (0.009x0.018). Vagina posterior to cirrus pouch measures 0.006-0.012 (0.009) in diameter. Receptaculum seminis measure 0.024-0.036x0.006-0.021 (0.030x0.014).

Genital atrium measures 0.012 - 0.024(0.018) deep and 0.012 -0.030(0.021) wide. Genital pores unilateral, located in the middle of the proglottid margin.

Uterus sac like measure 0.024-0.048x0.054-0.078(0.036 x0.066), which never reaches upto the

 ventral
 longitudinal
 excretory canals.
 Eggs
 measure

 0.0064-0.0112x0.0064-0.0104
 (0.0088x0.0084).

 Onchospheres
 measure
 0.0016-0.0056x0.0016-0.0048

 (0.0036x0.0032).

Ventral longitudinal excretory canals measure 0.006-0.018(0.012) in diameter.

#### DISCUSSION

The present form comes closer to Armadoskrjabinia magniuncinata (Meggitt, 1927) Yamaquti, 1959; Armadoskrjabinia nyrocai 1989 Srivastava, B.K. (unpublished thesis) and Armadoskrjabinia parviuncinata Meggitt, 1927.

The present form differs from A. magniuncinata (Meggitt, 1927) Yamaguti,1959 in having larger worms, wider scolex, narrower rostellum, larger rostellar hooks, different arrangement of testes, narrower cirrus pouch and different location of genital pores. Form A.nyrocai Srivastava, B.K., 1989 it differs in having smaller worms, smaller scolex, smaller rostellum, greater number of rostellar hooks, smaller suckers, smaller cirrus pouch, absence of internal and external seminal vesicles, different shape of ovary, presence of receptaculum seminis, uterus in two sacs which never crosses the ventral longitudinal excretory canals. From A.parviuncinata Meggitt, 1927 it differs in having

larger worms, narrower scolex, greater number of larger rostellar hooks, larger cirrus pouch which always reaches upto 2/3rd or proglottid width and position of genital pores.

In the light of the above discussion the present form is accommodated as a new species, Armadoskrjabinia pandein. sp.

The species is named after the eminent Indian Helminthologist, Prof (Dr.) K.C. Pandey, Vice Chancellor of C. C. S. University, Meerut (U.P.)

Host : Podiceps ruficollis(P.)

Habitat : Intestine

Locality : Niwari, Tikamgarh (M.P.)

Holotype : Department of Zoology

Bipin Bihari (P.S.) College,

Jhansi.

Comparison of the character of the species closer to A. pandein. so.

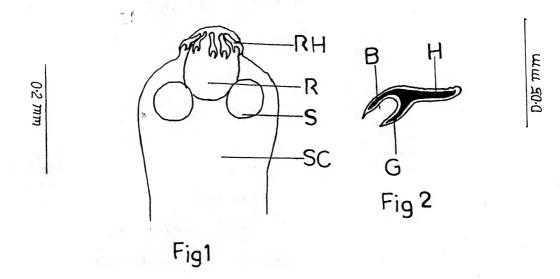
(Vite)con	oniuncinata itt. 1927) muti. 1957	A.nvrocalbrivaetava 8.K.1989 Linoublianed thesis	A. Darvinucinala Maggitt. 1927	A.candei n. %
1 consistent	Contract of the same	70-1300. 744	4, (50), 3	50-70x
Scolex	0.16-0.29 cia.	0.203-0.39240.301-0.393	0.15-0.3 dia	0,240-0,2 <b>59</b> x0,1 <del>66-</del> 0,259
Ficetell um	0.15 dia	0,123-0,233:0,068-0,176		0.072-0.138 0.056-0.198
Rostellar No. Size	hocks More than 10 0.0392	10 0,041-0,055	10 0.015-0.018	12 0,0421-0. <b>05</b> 1
Sickera		0.075-0.117× 0.075-0.118	<b></b>	0.030-0.079 0.030-0.079
Tester	l poral	1 poral. 230-	1 comal.	1 poral.2 a
Disposit		roal armanged in transveres row	2 sporal	oral arrang in transver red row
Size	And a first section of the section o	0. <b>035</b> -0.058< 0.035-0.059		0. 024-0.042 0. 030-0.060
Oimmud		0. 274-0. 392x	.11-0.12x0.023-	0.034-0.085

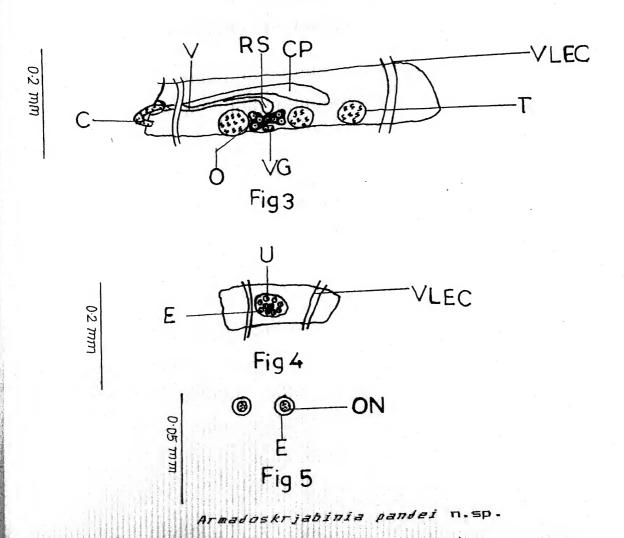
(Megs	aoniuncirata bitt. 1927) aquti. 1959	A.nvrocaiSrivastav B.K.1989 (unpublish thesis)	-	A.carvinucinat Meogist. 1927	a A.Dandai n. ac
Fouch	0.05-0.06 reacting neif way across proglottid of the VLEC	0.019-0.002.  extend beyond  the middle of  the proglottid  width		oppasionally the VLEC	0.012-0.042. reaches upto 2/3rd of the sreglettid width
Internal seminal vesicle	11,864	anweent		•••	oùs mante É
External seminal vesicie	. Come	oreales t		•••	d ræeds
Ovar'y	· · · · · · · · · · · · · · · · · · ·	transversely extend. 0.006- 0.022x0.031- 0.075		entre de la constantina della	<b>bilcb@d</b> 0.018-0.042: 0.054-0.078 -
Receptacu	lum 	acaent		NM	oresent
Genital	In the anterior half of the proplottid margin	In the midule of the proof- ottid margin	half	e anterior of the oro- dd margin	In the middle of the propiotical margin
- Jrtorement with	(company)	civided in two sacs, crosses the M.EC		<b>**</b>	divided in two sac never cro- sees the MLEC

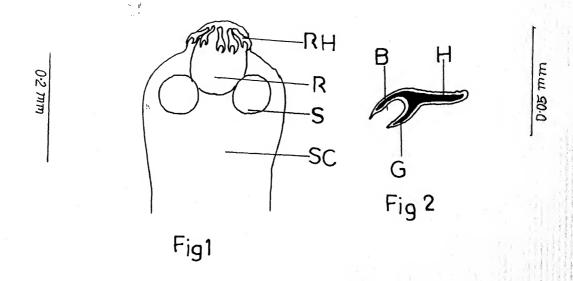
#### Armadoskrijabinia pandein.sp.

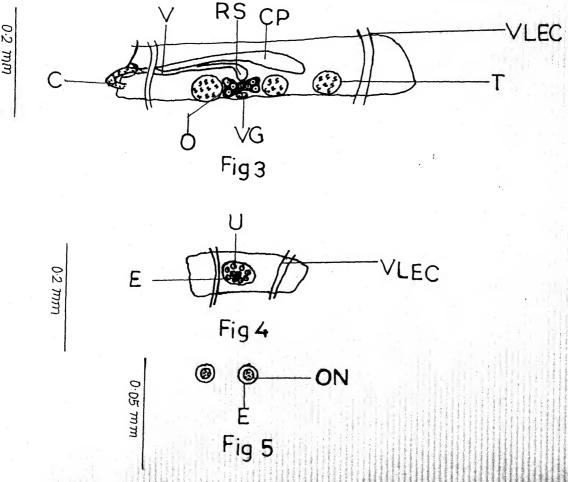
Fig	1.	Scolex (10x10) :
Fig	2	Rostellar hook (10x45)
Fig	3	Mature proglottid (10×10)
Fig	4	Gravid proglottid (10×10)
Fig	5	Egg (10×45)

Abbreviations :- B, blade; C, cirrus; CP, cirrus pouch; E, egg; G, guard; H, handle; O, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretary canal.









Family : Hymenolepididae Railliet etHenry, 1909

Subfamily: Hymenolepidinae Perrier, 1897

Genus : FesserilepisSpasskii etSpasskaja, 1954

Species : Passerilepis domestican. sp.

(Fig 1-6 PP 151)

Out of eight house sparrows, Passer domesticus (L.) examined at Gwalior (M.P.). One was found infected with two alike cestodes. Cestodes were present in the small intestine of the host. Morphological studies of the cestodes revealed them to belong the genus Passerilepis Spasskii et Spasskaja, 1954 of the subfamily Hymenolepidinae Perrier 1997; family Hymenolepididae Railliet etHenry, 1909.

Cestodes measure 40-47 cm. in length and 0.395 in maximum breadth. Proglottids broader than long and craspedote.

Scolex measures 0.180-0.210x0.174-0.192 (0.195x0.183). Suckers four, oval to round measure 0.078-0.090x0.072-0.084 (0.084x0.078). Rostellum armed, oval shape, protruted measures0.108-0.126x0.057-0.081 (0.117x0.069). Rostellar hooks ten in number arranged in single row measure 0.066-0.072 (0.069) in length. Rostellar hook contains long handle, 0.036-0.039 (0.038); long blade, 0.030-0.033 (0.032) and very short guard, 0.006-0.009 (0.008).

Neck measures 0.276-0.390x0.114-0.132 (0.333x0.123). Immature proglottids measures 0.006-0.042x0.132-0.346 (0.024x0.239); mature proglottids measure 0.032-0.046x0.299-0.395 (0.039x0.347) and gravid proglottids measure 0.0368-0.055x0.299-0.397 (0.046x0.348).

Testes three, oval to round, arranged in triangle measures 0.0115-0.023x0.013-0.025 (0.018x0.019) Cirrus couch club shape measures 0.036-0.069x0.009-0.025 (0.053x0.017), crosses the ventral longitudinal excretory canal. External seminal vesicle measures 0.018-0.041x0.009-0.018 (0.029x0.013). Internal seminal vesicle absent.

Female genitalia median. Ovary bilobed measures 0.0046-0.018x0.049-0.069 (0.011x0.060). Vitelline gland compact, postovarian measures 0.0046-0.012x0.0138-0.025 (0.007x0.020). Vagina measures 0.003-0.009 (0.006) in diameter. Receptaculum seminis absent.

Uterus begining as a two lobed sac later on forming a single sac measures 0.009-0.036x0.161-0.310 (0.022x0.236). Uterus do not extend beyond the limits of ventral longitudinal excretory canals. Eggs measure 0.005-0.008 (0.007) in diameter. Onchospheres measure 0.0023-0.0046 (0.0034) in diameter.

Genital atrium measures 0.003-0.009 (0.006) deep and 0.009-0.018 (0.014) wide. Genital openings

unilateral, situated in the middle of the proglottids margin.

Ventral longitudinal excretory canals measure 0.0041-0.0092 (0.0067) in diameter.

#### Discussion

The present form comes closer to Passerilepis arciuterusYamaguti, 1956, Passerilepis crenata (Goez, 1782) Sawada and Kugi, 1976; Passerilepis japonensis Sawada and Kugi, 1980; Passerilepis nebraskensis Rolen Laidahl, 1969; Passerilepis Dena (Ortlepp, 1938) Spasskii etSpasskaja, 1954; Passerilepis septamsororum (Burt, 1944) Yamaguti, 1959; Passerilepis taiwanensis (Yamaguti, 1935) Spaskii et Spasskaja, 1954; Passerilepis turdoviliDaisy Rani, 1993 (unpublished thesis) and Passerilepis zosterpis (Fuhrmann, 1918) Spasskii etSpasskaja, 1954.

The present forms differs from P.arciuterus Yamaguti, 1956 it differs in having narrower worms, narrower Scolex, wider rostellum, larger rosteller hooks, persence of neck, larger testes, smaller cirrus pouch smaller vitelline gland, absence of receptaculum seminis, smaller ovary and smaller eggs. From P.crenata (Goez, 1782) Sawada and Kugi, 1976 it differs in having small worms, narrower scolex, longer rostellum, larger rostellar hooks, smaller neck, smaller cirrus pouch, narrower ovary, narrower vitelline gland, absence of

receptaculum seminis and smaller eggs. From P. japonensis Sawada and Kugi, 1980 it differs in having smaller worms, larger scolex, wider rostellum, larger rostellar hooks, narrower neck, smaller testes, smaller cirrus pouch, narrower ovary, smaller vitelline gland, absence of receptaculum seminis and smaller eggs. From P. nebraskensisRolen and Laidahl, 1969 it differs in having wider scolex, wider rostellum, larger rostellar hooks and smaller cirrus pouch. From P. Dena (Ortlepp, #938) Spasskii etSpasskaja, 1954 it differs in having smaller worms, smaller scolex, wider rostellum, larger postellar hooks, shorter neck, smaller testes, smaller tirrus pouch, narrower vitelline gland and smaller aggs. From P. septamsororum(Burt, 1944) Yamaguti, 1959 It differs in having narrower worms, narrower scolex, wider rostellum, smaller testes, smaller cirrus pouch, vitelline gland, absence of receptaculum smaller and smaller eggs. From P. taiwanensis (Yamaguti, 1935) Spasskii etSpasskaja, 1954 it differs in having narrower worms, narrower scolex, larger rostellar hooks, larger neck, smaller testes, smaller cirrus pouch, smaller ovary, smaller vitelline gland, absence of receptaculum seminis and smaller eggs. From P. turdovili Rani, Daisy, 1993 in having narrower worms, wider scolex, larger rostellar hooks, longer neck, smaller testes, smaller cirrus pouch, smaller ovary, smaller vitalline gland, absence of receptaculum seminis and smaller eggs. From P. zosterpis (Fuhrmann, 1918) Spasskii etSoasskaja, 1954 it differs in having narrower worms, smaller testes smaller cirrus pouch, narrower ovary, narrower vitelline gland, absence of receptaculum seminis and smaller eggs.

In the light of above discussion it is proposed to accommodate the present form as a new species, Passerilepis domestican.sp.

Host : Fasser domesticus(L.)

Habitat : Small Intentine

Locality : Gwalior (M.P.)

Holotype : Department of Zoology,

Bipin Bihari (P.G.) College, Jhansi

Table 15 Comparison of the character of the species closer to Passerileois domestican. sp.

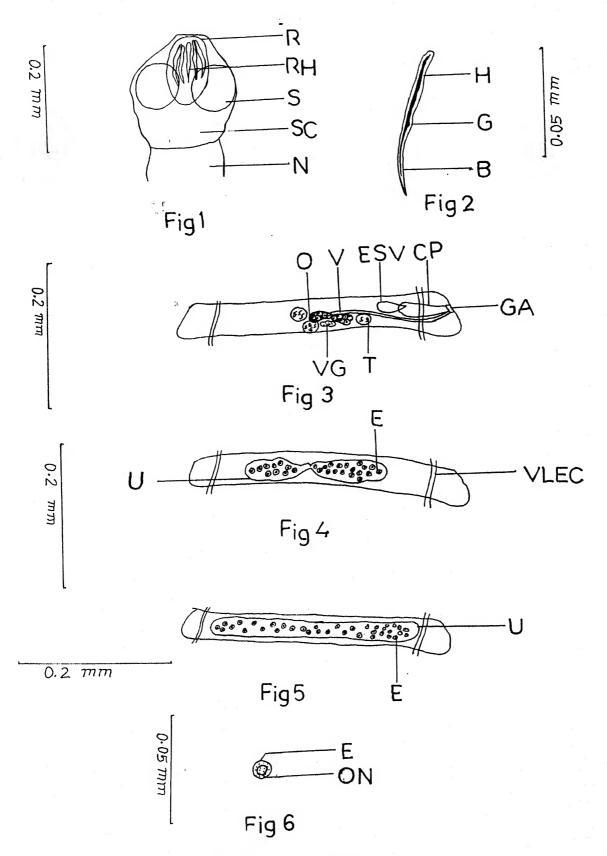
	Size	Scolex	Sucker	Rost- ellum	Rostellar Neck hooks
. arciuterus (amaputi.1956	30xv.75	0.275	0.18×0.084	0.12x0.045	0.03\$ Absent
.crenata Bdez.1782) awada ano ugi 1976				0.042+0.077x 0.070-0.084	0.024
japonansis Bawada & Kuqi 1980			0.084-0.091x 0.077-0.084	0.112x0.05£	0.030 0.224
Plnebraskensi Molan & Leida 1969		0.145		0,053	0.0132 -
). P.pena(Orsieb 1938)Spassky Spasskaja, 19	et 1.6-1.		0.1-0.12» 0.086-0.09	0.635	0.0410.58-0.75 0.05 x0.097-0.1
P.septemsoror (Burt.1944) Yamaguti, 195	0.		0.078-0.082	0.085x0.055	
F.taiwamensis (Yamaquti.193 Spassky et passkaja.1954	(5)	, 9,1 <del>8-</del> 0,216	0.08-0.1	0.0970.954	0.033- 0.25-0.38x 0.035 0.4-0.12
P.turdovili 1 Rani daisy. 1993			( 0.054-0.081) 0.138 0.055-(	( 0.070-0.120 3.042 0.028-	<pre>0.03- 0.159-0. 0.070 0.035 182-0.126 -).140</pre>
P. coaberois ( 4Funt, 1918) Boassawy et Boasswaia, 195		0,2	-	-	
	40-474 0 <b>.39</b> 9	コー・カー・フルー・	$0.192 \pm 0.072$	-0.1864 xv.V3/	0.066+ 0.276- -0.081 0.072 0.390a 7-0.069) (0.069) 0.114-0

	Testes	Cirrus oouch Siza	Ovany	Vitelling Gland	Secretary)	Elda
		0.030-9.0		0.04(-4.050x 4 ).30 0.05(-4.0		5,755- 6,678k 1 6,678 1 672
crenata bez.1752: awada and bil 1676		940-0,154× 0.0 <b>55</b> -0.0		0.03 <b>5</b> x6.042		
apone 1919 /.		(,236-6 <b>,245</b> 0 211 (,065	0.045-0.2	52 0.050-0.0TQ 0.050-1. 2	0.154-9.050 (*)	
inebraskansia olan % Leagah 962		0.297-0.047	~	· <u>-</u>	-	-
	<b>al 0.1</b> x0 0.08x	.052 \$ 0.072	-	0.05-1	Mi	).045-0.048 iddle 0.03-0.033 in shell 0.0
.septemscroru Burt.1944) amaquti.1959	im0.116-0.12		x - 0,04 <b>4</b>	0.07 0.19	6-0.18x 0.13-0.14	), 041-0, 051
i V.talwanensis (Yamaquti, 191 Spasskii et passkaja. 195	55)	0.13-0.14x 0.04-0.0	0,15-0,18 0,22 0,22	x 0.06-0.07x 0. -0.24 0.06-0.1	13-0.22× 0.13-0.18	0,65-0,087x 0,048-0,067
P.turdovili Pani daisy. 1993	0.02-0.05	0.098-0.140x ( 0.020-0.03	).03-6.07x 30 0.04-0	0.014-0.030x 0 .090 0.028-0.03	.01-0.02x 0 0.01-0.0	0,015-0,022 1 <b>5</b>
F.zosterpis (Fubrmann 191 Spasskii et spasskaja, 19	8)	0.12-0.14	0.16	0.06	0.7	0.06
F.domestica û n. sp.	A 017-A	0.009-0	.025 0.047	8x 0.0046-0.012 0-0.069 0.0138- 011x0060) (0.007)	*V = V&-J	0.005-0.008

### Passerilepis domestican.sp

Fig 1	Scolex with neck	(10×10)
Fig 2	Rostellar hook	(10::45)
Fig 3	Mature proglottid	(15×10)
Fig 4	Gravid proglottid	(15×10)
Fig 5	Gravid proglottid	(15×10)
Fig 6	Egg	(10×45)

Abbreviations :- B, blade; CP, cirrus pouch; E, eqq; EVS, external seminal vesicle; G, guard; GA, genital atrium; H, handle; N, neck; O, Ovary; ON, onchospheres; R, rostellun; RH, rostellar hook; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.



Passerilepis domestica n.sp.

Family : Hymenolepididae Railliet etHenry, 1909.

Subfamily : Hymenolepidinae Perrier, 1897.

Genus : Hardayalin.g.

Species : Hardayali anasin.g. n.sp.

(figs. 1-4, FF-161)

Out of seven blue winged teal, Anas querquedula (Linnaeus), examined at Niwari District Tikamgarh (M.P.), two were found infected with two cestodes in their intestines. The morphological studies of the cestodes revealed them to belong to the new genus Hardayali and a new spacies Hardayali anasi n.sp. of the subfamily Hymenolepidinae Perrier, 1897; family Hymenolepididae Railliet etHanry, 1909.

#### Hardayalin.g.

#### Generic Diagnosis:

Subfamily Hymenolepidinae, family Hymenolepididae:
medium sized worm. One set of reproductive organ.
Scolex with an armed rostellum. Proglottids craspedote.
Testes three, arranged in triangle. Senital pores unilateral. Reproductive organs present only on posterior proglottids. Ovary bilohed obliquely.
Vitalline gland large, postovarian. Vagina opens anterior to cirrus pouch. Uterus sac like with in the limits of ventral longitudinal excretory canals.
Parasites of aquatic birds.

### Hardayali anasin.g., n.sp.

Cestodes measure 50-60 (55) cm in length and 0.780 in maximum width as seen in the mature proplettids. Proplettids broader than long and craspedete.

O.451(0.435x0.428). Suckers four, unarmed, oval to round measures 0.194-0.201x0.143-0.214(0.193x0.179). Rostellum oval armed measures 0.190-0.210x0.154-0.181(0.201x0.172). Rostellum bears 16-20 rostellar hooks arranged in single row measuring 0.096-0.128(0.112) in length. Handle and blade approximately equal in length, but guard very short. A handle, 0.054-0.078(0.066); a blade, 0.042-0.054(0.048) and a guard, 0.006-0.008(0.007) in length.

Neck prominent measures 1.050-1.125x0.195-0.224 (1.080x0.210). Immature proglottids measure 0.054-0.102x0.228-0.558 (0.078x0.393); mature proglottids measure 0.204-0.288x0.570-0.781 (0.246x0.675) and gravid proglottids measure 0.156-0.240x0.612-0.708 (0.198x0.661).

Reproductive organs only in posterior proglottids.

Testes three, oval to round triangular, in the anterior half of the proglottid which never crosses the ventral longitudinal excretory canals. Testes measures

0.072-0.144 $\times$ 0.054-0.138(0.108 $\times$ 0.096).Cirrus pouch measures 0.078 - 0.144  $\times$  0.018 - 0.054 (0.111 $\times$ 0.036), crosses the poral ventral longitudinal excretory canals. Internal and external seminal vesicles absent.

Female genitalia median ovary obliquely bilobed measures 0.042-0.108x0.192-0.246 (0.075x0.219). Vitelline gland large, compact postovarian measures 0.030-0.084x0.042-0.090 (0.057x0.066). Vagina measures 0.004-0.016 (0.011) in diameter anterior to cirrus pouch opens into the genital atrium. Receptaculum seminis measure 0.072-0.108x0.024-0.048 (0.090x0.036), situated at the proximal end of vagina.

Senital atrium measures 0.018-0.048 (0.033) deep and 0.024-0.048 (0.036) wide. Senital openings unilateral, situated in the middle half of the proglottid margin.

Uterus persistant measures  $0.126-0.210\times0.408-0.564$  (0.168×0.486), within the limits of ventral longitudinal excretory canals. Eggs measure  $0.006-0.014\times0.006-0.014$  (0.010×0.010).

Ventral longitudinal excretory canals measure 0.006-0.018(0.012) in diameter.

#### DISCUSSION

According to Schmidt, 1986 the cestodes belong to the family Hymenolepididae Railliet etHenry, 1909 On the basis of genital ducts, seminal vesicles, disposition of testes and vitellarium. It comes closer to CladogyniaBear, 1937 and DilepidoidesSpasskii et spasskaja, 1954.

The present form differs from Cladogynia Baer, 1937 in having presence of triangular testes presence of cirrus pouch, absence of vas diferens different shape and extension of ovary, simple vitelline gland, vaginal pore anterior to cirrus pouch and sac like uterus which never crosses the ventral longitudinal excretory canals. From Dilepidoides Spasskii et Spasskaja, 1954 it differs in having triangular testes, unarmed cirrus, absence of internal seminal vesicle, absence of vas deferens, obliquely located ovary and shape of receptaculum seminis.

In the light of above discussion the present form is accommodated as a new genus, Hardayaliand a new species, Hardayali anasin.g., n.sp.

The genus is named in honour of Late Dr.H.D.Srivastava an eminent Indian Helminthologist.

Host : Anas querquedula(L)

Habitat : Intestine

Locality : Niwari , Tikamgarh (M.F.)

Holotype : Department of Zoology ,

Bipin Bihari (P.G.) College,

Jhansi

 $\label{thm:comparison} \mbox{Table -i} \mbox{$\delta$}$  Comparison of the characters of various genera closer to Hardayalin.g

ger valle	SladooyniaBear, 1937	DileoidoidesSpasskii et Spasskaja, 1954	Hardayali anasın.g. n.so.
	Three in transverse	Three in Transverserow	three in triangl
Cirrus	Absent	Armed with six sizes of spines	absert
Cirrus peuch	Absent	Cirrus bouch long, slen- der or claviform .	Cirrus pouch amall, club shape crosses the ventral longitu- dinal excretory cana
Internal seminal vesicle	Absent	Fresent	Absent
Vas deferens	Fresent	Strongly convoluted	Absent
Ovary	Ovray strongly branched, extending transversely in ventral medulla across		oblique. bilobed
Vitelline gland	Strongly branched, median	postovarian	Postovanian. peer shaped.
/agina	Ventral to male accoratus	Stronely developed thick walled	Anterior to cirrus
	Elongate. almost cylindrical	Rounded .	Elongated, club shaped
Sterus	Reticular, dorsal to ovary, crossing lateral canals.	Reticulate	Saclike persistant

### KEY TO THE GENERA IN HYMENOLEPIDINAE

ia.	Two sets of reproductive organs in each proglottids	Diplog- ynia
	One set of reproductive organs per proglottid Suckers absent from scolex	2 Acotyl- oepis
25.	Suckers present on scolex (may be vestigial)	3
За.	One testes per proglottid	4
3b.	More than one testes per proglottid	7
7a.	Two testes per proglottid	9
7b.	More than two testes per proglottid	16
16a.	Three testes per proglottid	17
16b.	More than three testes per proglotti	d70
17a.	Suckers armed	18
175.	Suckers unarmed	n . n = 21
21a.	Rostellum absent or rudementory, unarmed	22
34a.	External segmentation lacking, Inter segmentation conspicuous	nal Parafim- briaria
34b.	External segmentation evident	
35a.	Five pairs of osmoregulatory canals	Hymen- ofimbrice
35b.	Two pairs of osmoregularoty canals	
36a,	Rostellum with many small hooks behind apical circle	.137
3 <b>6b.</b>	Rostellum with only one (rarely two) circles of hooks	38
J8a.	Scolex with huge hemispherical roste armed near its base with a circle of to 90 hooks	llum 80 Hilmylepis
38h.	Scolex not as above	39

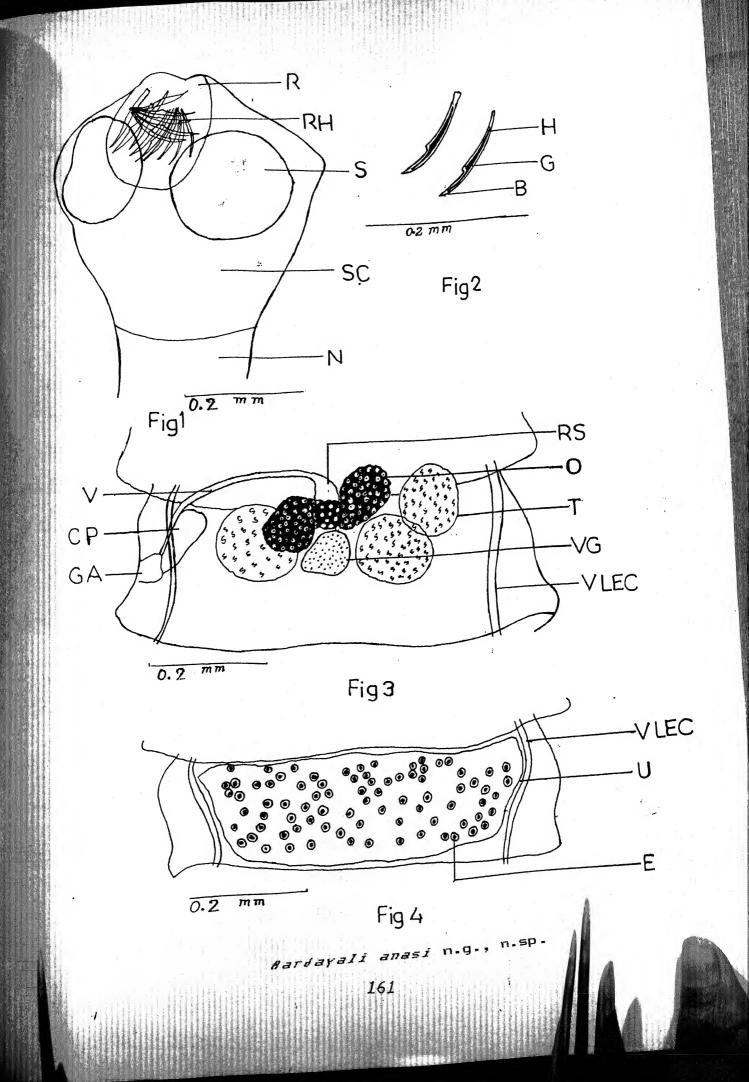
39a.	All three testes poral to ovary	Drepanid- otaenia
39b.	Testes not as above	40
40a.	Uterus reticulate	Flaming- olepis
40b.	Uterus not reticulate	41
41a.	Gravid uterus forming two sacs, which may be joined by narrow isthmu	1542
41b.	Gravid Uterus not as above	43
43a.	Parasites of mammals	44
43b.	Parasites of birds	49
49a.	Antiporal margin of strobila strongly fimbrieted	Hispaniolepi
49b.	Lateral margins of strobila similar	50
	Poral and most antiporal testes outs osmoregulatory canals, persistent; developing uterus nearly surrounds the	
50b.	Testes and Uterus not as above	51
51a.	Genital atrium with accessory sacs	52
51b.	Genital atrium without accessory sac	cs40
60a.	Ovary reticular	Avocett- olepis
60b.	Ovary not reticular	61
61a.	Internal and external seminal vesicles absent	62
61b.	At least one seminal vesicle presen	t63
έZa.	Cirrus pouch absent, replaced by a complex ejaculatory duct	Cladogynia
62b.	Cirrus pouch present	Dilepidoides
62c.	Testes triangular, cirrus pouch smal cirrus without spines	l Hardayali <b>n.ç.</b>

# Hardayali anasi

Fig 1	Scolex	with	neck	(10×1m)
-------	--------	------	------	---------

- Fig 2 Rostellar hooks (15×10)
- Fig 3 Mature proglottid (10×10)
- Fig 4 Gravid proglottid (10×10)

Abbreviations: - B. blade; CP, cirrus pouch; E, egg; 6, guard; GA, genital atrium; H, handle; N, neck; O, ovary; R, rostellum; RH, rostellar hooks; RS, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLCE, ventral longitudinal excretory canal.



10

410)

Family : Hymenolepididae Railliet etHenry, 1909

Subfamily: Hymenolepidinae Perrier, 1897

Genus : DicranotaeniaRailliet, 1892

species : Dicranotaenia acutan.sp.

(Fig 1-5, FP 169 )

Out of four Dighonch, Anas acuta(Linn.) examined at District Guna (M.P.), one was found with six alike cestodes from the intentine of the host. The morphological studies of the cestodes revealed them to belong to the genus DicranotaeniaRailliet, 1892 of the subfamily Hymenolepidinae Perrier, 1897; family Hymenolepididae Railliet etHenry, 1909.

Cestodes measures 30-48 cm in length and 0.430 in maximum breadth as seen in gravid proglottids. Strobila consists of number of Proglottids which are broader than long.

Measures 0.165-0.206x0.144-0.168 (0.186x0.156). Suckers oval to round, unarmed measure 0.056-0.068x0.056-0.068 (0.062x0.062). Armed rostellum measures 0.090-0.108x0.075-0.090 (0.099x0.083). Rostellar hooks 18-20 in number, arranged in single row measure 0.0290-0.0420 (0.035) in length. Hooks bear a handle, 0.018-0.027 (0.023); a blade, 0.015-0.021 (0.018) and a guard, 0.012-0.018 (0.015) in length.

Neck measures  $0.540-0.660\times0.078-0.096$   $(0.601\times0.087)$ . Immature proglottids measure  $0.018-0.036\times0.126-0.204$   $(0.027\times0.165)$ ; mature proglottids measure  $0.042-0.108\times0.216-0.338$   $(0.075\times0.304)$  and gravid proglottids measure  $0.054-0.102\times0.288-0.442$   $(0.075\times0.316)$ .

Testes oval to round measures 0.012-0.019x0.015-0.024 (0.015x0.020). Testes arranged in triangle, one poral and two aporal, within the limits of ventral longitudinal excretory canals. Cirrus pouch reaches upto aporal ventral longitudinal excretory canal. Cirrus pouch measures 0.210-0.295x0.012-0.036 (0.253x0.024). Internal seminal vesicle measures 0.114-0.161x0.007-0.031 (0.141x0.021). External seminal vesicle absent.

Female genitalia slightly aporal.Ovary 0.010-0.024x0.036-0.054 0.018x0.041).Vitelline gland compact, postovarian, measures 0.006-0.012x0.009-0.018 (0.009x0.014). Vagina measures 0.009-0.018 (0.014) in diameter. Receptaculum seminis measures 0.042-0.066x0.012-0.023 (0.051x0.018).

Genital atrium measures 0.009-0.018 (0.011) deep and 0.008-0.019 (0.012) wide. Genital openings unilateral and situated in the middle of the proglottid margin.

Uterus sac like measures  $0.042-0.068\times0.305-0.395$  (0.051 × 0.338), laterally extend beyond the limits of ventral longitudinal excretory canals. Egg measures  $0.009-0.018\times0.018-0.021$  (0.012×0.012). Onchospheres measure  $0.004-0.007\times0.005-0.007$  (0.006×0.006). Embryonic hooks measure 0.0064-0.0096 (0.008) in length.

Dorsal longitudinal excretory canals measure 0.009-0.015 (0.012) in diameter and ventral longitudinal excretory canals measure 0.012-0.024 (0.018) in diameter.

#### Discussion

The present form comes closer to Dicranotaenia aequabilis (Rud., 1810) Lopez-Neyra, 1942; Dicranotaenia alcippina Srivastav and Capoor, 1980 Dicranotaenia amphitricha (Rud, 1819) Lopez Neyra, 1942; Dicranotaenia fryci Mayhew, 1925) Syn. Hymenolepis californicus Young, 1950; Dicranotaenia microcirrosa (Mayhew, 1925) Lopez-Neyra, 1942; Dicranotaenia minisacculata Macko, 1991; Dicranotaenia recurvirostroides (Meggitt, 1927) Yamaguti, 1959; Dicranotaenia stenosacculata Macko, 1991 and Dicranotaenia uragahaensis(Burt, 1944) Yamaguti, 1959.

The present form differs from D.aequabilis (Rud., 1810) Lopez-Neyra, 1942 in having smaller worms,

narrower scolex, longer rostellar hooks, narrower suckers, smaller cirrus, pouch, absence of external seminal vesicles and smaller eggs. From D.alcippina Srivastav and Capoor, 1980 in having smaller worms, narrower scolex, wider rostellum, longer rostellar hooks, narrower suckers, disposition of testes, longer cirrus pouch which reaches upto aporal ventral longitudinal excretory canal, absence of external seminal vesicles and smaller eggs. From D.amphitricha (Rud., 1819) Lopez-Neyra, 1942 in having longer worms, wider scolex wider rostellum, longer rostellar hooks, wider suckers, smaller cirrus pouch and smaller eggs. From D. fryei (Mayhew, 1925) Syn. Hymenolepis californicusYoung, 1950 in having smaller worms, wider scolex, larger rostellar hooks, disposition of testes, cirrus pouch reaches upto aporal ventral longitudinal excretory canal, absence of external seminal vesicle and smaller eggs. From D. microcirrosa (Mayhew, 1925) Lopez-Neyra, 1942 in having narrower worms, wider scolek, narrower rostellum larger rostellar hooks, circus pouch reaches up to appral ventral longitudinal expretory canal, absence of external seminal vesicle and smaller eggs. From D. minisacculataMacko, 1991 in having smaller worms, nanrower scoler, smallth rostallar hooks, narrower suckers, disposition testes, cirrus pouch reaches upto aporal ventre longitudinal excretory canals, presence pr internal

seminal vesicle, absence of external seminal vesicle. From D. recurvirostroides Meggitt, 1927 Yamaquti. 1959 in having narrower worms, wider scolex, wider rostellum, larger rostellar hooks, testes arranged in triangle and larger cirrus pouch reaches upto aporal ventral longitudinal excretory canals. From Distence acculata Macko, 1991 in having smaller worms, narrower scolex, narrower rostellum larger rostellar hooks, testes arranged in triangle, cirrus pouch reaches upto aporal ventral longitudinal excretory canal and absense of external seminal vesicles and from D.uragahaensis (Burt, 1944) Yamaguti, 1959 in having narrower worms, narrower scolex, longer rostellum, larger rostellar hooks, narrower suckers, longer cirrus pouch reaches upto aporal ventral longitudinal excretory canal, absence of external seminal vesicle and smaller eggs.

In the light of above discussion the present form is accommodated as a new species, Dicranotaenia acuta n. sp.

Host : Anas acuta(L)

Habitat : Intestine

Locality : Guna (M.P.)

Holotype : Department of Zoology,

Bipin Bihari (P.G.) College,

Jhansi

TABLE 17

Comparison of the characters of the species closer to Dicranotaenia acuta n. sp.

	D. aequabiles (Red., 1810) Lopez-Neyra, 1942	Srivastav &	hitri- cha (Rud., 1819) Lopez-		rosa (May		o virostroi	Macko,1991	D.uragaha ensis (Burt,1944) Yamaguti, 1959	0.acuta n. sp.
Size	204-430 x 3.5-5.2	35.0-60.0x 0.921	110.0 (L)	115.0x1.0	30.0-36.0x 2.0	240x5	30.0x0.8	116 x 1.4	17.0-25.0x 0.62-0.74	30-48x 0.430
Scolex	0.274	0.152-0.256	0.125	0.106	0.1	252-295	0.13	0.253	0.187-0.214	0.144-0.168
Rostellum	-	0.064-0.102x 0.043-0.057	0.045	-	0.2	156-158x 73-84	0.04	0.052	0.042-0.048x 0.085	0.090-0.108x 0.075-0.090
Rostellar hooks	0.028-0.032	0.019-0.028	0.022	0.017-0.019	0.0112	15-16.5	0.01-0.015	0.013-	0.029- 0.030	0.0290 - 0.0420
Sucker	0.11	0.057-0.095	0.057	-	~	72-91	- 1	0.074-0.07E	0.085-0.099	0.056-0.068
Testes . disposition	~		1 poral & 2 ap oral	irregular		2 aporal & 1 poral lateral to overy		irregular	triangle	triangle 1 poral 2 aporal
Cirrus pouch	0.548x0.137- 0.16	0.152-0.205x 0.032-0.053	0.297- 0.32x 0.036- 0.037	<b>-</b>	-	,	0.096-0.11 x 0.017	-	0.1-0.11k 0.031-0.037	0.210-0.295; 0.012-0.036
Extension		never reaches upto the mid- dle of the proglittid		may extend upto middle of the seg- ment.		the VIEC	just rea- ches upto ventro- lateral excretory canal	the VLEC a	Extend upto middle of the segment	reaches upto aporal VLEC
Internal Seminal Vesic		present	present	present	present	absent	-	present	present	present
External Seminal Vesic		present	<del>spe</del>	present	present	present	-	present	present	absent
igg	0.037-0.044x 0.022	0.02-0.042x 0.03-0.042					- -	. , 1.,		0.009-0.015x 0.018-0.021

### Dicranotaenia acuta n. sp.

Fig 1 Scolex (10x10)

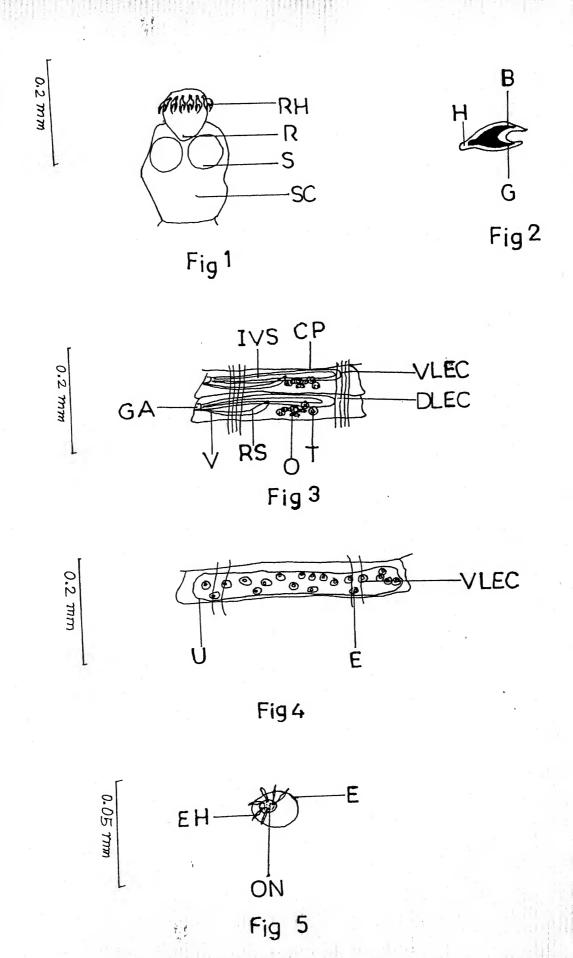
Fig 2 Rostellar hook (10×45)

Fig 3 Mature proglottids (10x10)

Fig 4 Gravid proglottid (10x10)

Fig 5 Egg with embryonic hooks (10x45)

Abbraviations :- B, blade; CP, cirrus pouch; DLEC, dorsal longitudinal excretory canal; E, egg; EH, embryonic hook; G, guard; GA, genital atrium; H, handle; IVS, internal seminal vesicle; O, ovary; ON, onchospheres; E, rostellum; EH, rostellar hook; ES, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VLEC, ventral longitudinal excretory canal.



0.05 mm

Dicranotaenia acuta n.sp.

Family : Hymenolepididae Railliet et Henry, 1909

Subfaimly: Hymenolepidinae Perrier, 1897

Genus : VariolepisSpasskii etSpasskaja, 1954

Species : Variolepis lalin.sp.

(Fig 1-5, PF 178 )

One out of four coot, Fulica atra (L.) examined at Bharmau, Distt. Jhansi (U.P.) was found infected with two cestods. Morphological studies of the cestodes revealed them to belong to the genus Variolepis Spasskii et Spasskaja, 1954 of the subfamily. Hymenolepidinae Perrier, 1897; family Hymenolepididae Failliet etHenry, 1909.

Cestodes measure 46-59 cm in length 0.660 in maximum width. Proglottids broader than long and craspedote.

Scolex measures 0.204-0.222x0.192-0.210 (0.213x0.201). Suckers four, unarmed, oval to round measures, 0.051-0.060x0.042-0.048 (0.056x0.045). Rostellum protrusible measures 0.108-0.126x0.072-0.090 (0.117x0.081). Rostellar hooks 14 in number measure 0.048-0.060 (0.054) in length. Handle measures 0.0256-0.0320 (0.0288); guard measures 0.0084-0.0106 (0.095) and blade measures 0.0084-0.0108 (0.096) in length.

Neck measures 0.534-0.570x0.102-0.126 (0.552x0.114). Immature proglottids measure 0.018o.030x0.150-0.414 (0.024x0.282); mature proglottids measure 0.042-0.078x0.480-0.560 (0.660x0.571) and gravid proglottids measure 0.114-0.144x0.355-0.468 (0.129x0.417).

Testes 3 in number, 1 poral and 2 aporal in a transverse row, oval to round, measures 0.021-0.030x0.024-0.031 (0.026x0.026). Eirrus pouch elongated measures 0.198-0.252x0.012-0.028 (0.225x0.220), do not reache upto mid of the proglottids width. Armed cirrus measures 0.024-0.054x0.006-0.012 (0.039x0.009). External seminal vesicles measure 0.042-0.072x0.006-0.021 (0.057x0.014). Internal seminal vesicles absent.

Female genitalia median. Ovary transversely elongated measures 0.012-0.038x0.132-0.181 (0.025x0.157). Vitelline gland postovarian, compact measures 0.006-0.012x0.024-0.036 (0.009x0.031). Vagina measures 0.006-0.014 (0.010) in diamster. Saceptaculum seminis absent.

Genital atrium mersumer 0.019-0.071 (0.014) wide and 0.004-0.019 (0.017) drep, proital openings untilateral situated in middle of the proglottic margin.

Uterus sac like measures 0.060-0.072 $\times$ 0.180-0.214 (0.066 $\times$ 0.197), never reaches the ventral longitudinal excretory canals. Egg measures 0.015-0.021 $\times$ 0.013-0.022

(0.019×0.018). Onchospheres measure 0.006-0.013×0.007-

Ventral longitudinal excretory canals measure
0.006-0.013 (0.010) in diameter.

### Discussion

The present form comes closer to Variolepis hughesi (Webster, 1947) Yamaguti, 1959; Variolepis passerus Tewari, 1987 (unpublished thesis); variolepis planestici (Mayhew, 1925) Spasskii et Spasskaja, 1954; Variolepis tristis Tewari, 1987 (unpublished Thesis); Variolepis variabillis (Mayhew, 1925) Yamaguti, 1954; Variolepis victoriata (Inamdar, 1934) Spasskii et Spasskaja, 1954.

from *V. hughesi* (Webster, 1947) Yamguti, 1959 it differs in having narrower worms, wider scolex, narrower suckers, greater number of larger rostellar hooks, smaller testes, longer cirrus pouch, transverse narrower ovary, narrower vitelline gland, smaller eggs and smaller onchospheres. From *V.passerus* Tewari, 1987 it differs in having longer worms, narrower scolex, narrower rostellum, different shape of greater number of larger rostellar hooks, smaller testes which never reaches upto poral ventral longitudinal excretory canal, narrower cirrus pouch, transverse tube like narrower ovary, smaller simple vitelline gland, absence

receptaculum seminis, smaller eggs and amaller onchospheres. From *V plansetici* (Mayhew, 1925) Spasskii et Spasskaja, 1954 it differs in having longer worms, greater number of larger rostellar hooks, smaller testes, transverse tube like ovary, smaller eggs and smaller onchospheres. From *V. tristis* Tewari, 1987 it differs in having longer worms, narrower suckers, larger rostellum, different shape and greater number of larger rostellar hooks, smaller testes which never reaches upto ventral longitudinal excretory canals, smaller cirrus pouch which clearly crosses the ventral longitudinal excretory canal, different shape narrower ovary, simple smaller vitelline gland, smaller eggs and smaller onchospheres. From V. variabillis (Mayhew, 1925) Yamaguti, 1959 it differs in having longer worms, narrower suckers, wider rostellum greater number of larger rostellar hooks, cirrus pouch reaches more than 1/3rd width of the proglottid and transverse tube like ovary. From V. victoriata (Inamdar, 1934) Spasskii et Spasskaja, 1954 it differs in having narrower worms, narrower suckers, greater number of larger rostellar hooks, larger testes, narrower cirrus pouch never reaches upto mid of the proglottid width, transverse tube like ovary, smaller eegs and smaller onchospheres.

In the light of the above discussion it is

proposed to accommodate the present form as a new species, Variolepis lali n. sp.

The new species is named in the honour of Dr S. S.

Lal Prof. & Head of the Zoology Department of C. S. S.

University, Meerut.(u.p)

Host : fulica atra (L.)

Habitat : Intestine

Locality : Gharmau, Jhansi

Holotype : Department of Zoology

Bipin Bihari (P.G.) College, Jhansi

Table 18

Comparison of the characters of the species closer to Variolepis Iali o.sp.

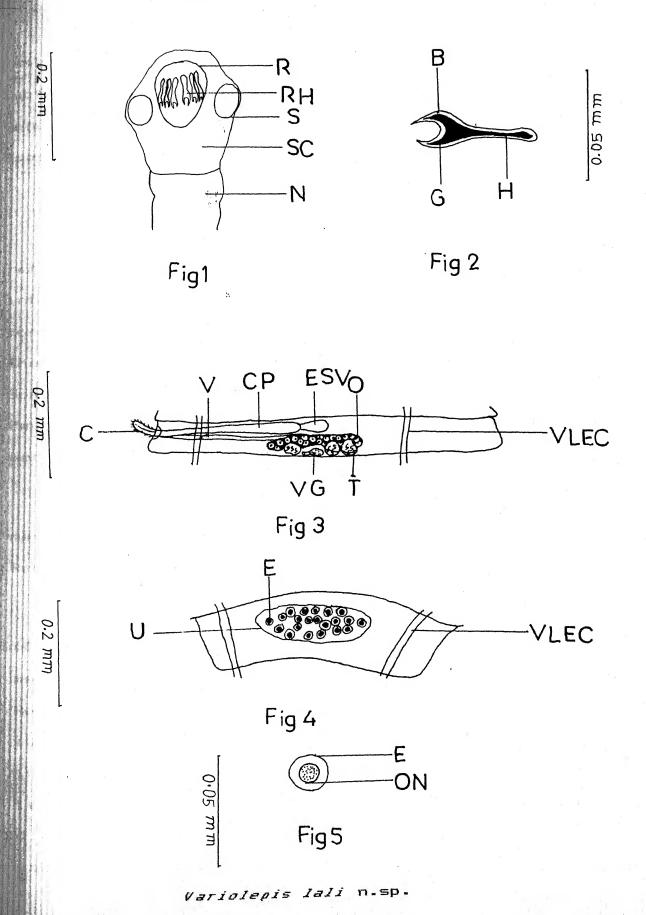
	0.23-0.25 0.08-0.09 0.05-0.07x	10-35x0.5-1.5 0.2	21-34×1.4 0.154-0.198 0.042-0.076	0.08	0.2	46-59x 0.660 0.192- 0.210 0.042- 0.048
064-0.082 04-0.054	0.08-0.09 0.05-0.07x	0.2	0.042-0.076	0.08	0.07	0.210 6.042- 6.048
4-0.054	0.05 <del>-0.07</del> x	- · .				0.048
		•	0 07-0 0 <b>84</b> v	3.00		
	0.04-0.06		0.03-0.04	0.02	0.212x 0.087	0.108- 0.126x 0.072- 0.090
						0,070
		44		10	10	14
	10 0.014-0.015 taenia like	10 0.014	3 0.017–0.02 cheli form	0.02-	0.0228-	0.048- 0.060 'Y'shape
	accral testes reaches ucto		0.056-0.112 poral and aporal teste	8	0.014	0.024- 0.031 in tran sverse row
158-0.180× 045-0.053	0.17-0.24x 0.04-0.07	-	0.18-0.2x 0.03-0.04	-	0.21x0.043	0.198- 0.252x- 0.012- 0.029
-	24-0.154 58-0.180x	24-0.164	24-0.164 0.12-0.17 0.05-0.08 apprai testes reaches upto VLEC 58-0.180x 0.17-0.24x -	24-0.164 0.12-0.17 0.06-0.08 0.028-0.098x aboral testes 0.056-0.112 reaches up to poral and VLEC apprai teste reaches near 58-0.180x 0.17-0.24x - 0.18-0.2x	24-0.164 0.12-0.17 0.05-0.08 0.028-0.098x - appral testes 0.055-0.112 reaches up to poral and VLEC appral testes reaches near 58-0.180x 0.17-0.24x - 0.18-0.2x -	24-0.164 0.12-0.17 0.06-0.08 0.028-0.098x - 0.014 aboral testes 0.056-0.112 reaches up to poral and VLEC appral testes reaches near 58-0.180x 0.17-0.24x - 0.18-0.2x - 0.21x0.043

	V.hughesi (Webster. 1947) Yamaquti, 1959	V.passerus Tewari,1987	tici	V.tristis Tewari. 1987 et	illis (Mayhew. 1925)	riata n.	V.lali so.
axten?	310A -	Crossing the VLEC	-	upto or cross the VLEC	width		has uo to mid dle width of the progla
	0.278-0.4 biloped or triloped	lobulated		0.098-0.294 bilobed each lobe further lobulated.		. 0.17	ttid 0.012- 0.038x 0.132- 0.181 trans- versly elompa- ted
	- 0.078-0.102 gland	0.05-0.08% 0.08-0.10 variously lobed		0.028-0.056x 0.042-0.112 variously lobed	rear	-	0.006- 0.012x 0.024- 0.036 Compact
Recep aculu	r.	present	1969	absent		~	absent
semin Eqq	is   0.647-0.6E	0.04-0.07	0.035±0,047	0,02-0,049		9,048;(,045	0.015- 0.021x 0.013- 0.022
ûncho oners	os (1.051-0.05] PS	0.02-0.04	0.032x0.024	0.014-0.028		0.019	0.335 0.313a 3.007-

### Variolepis lali n. sp.

Fig 1	Scolex with neck	(10×10)
Fig 2	Rostellar hook	(10×45)
Fig 3	Mature proglottid	(10×10)
Fig 4	Gravid proglottid	(10×10)
Fig 5	Egg	(10×45)

Abbreviations: - B, blade; C, cirrus; CP, cirrus pouch; E, egg; EVS, external seminal vesicle; G, guard; H, handle; N, neck; O, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; S, sucker; SC, scolex; T, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinial excretory canal.



Family : Hymenolepididae Railliet et Henry, 1909

Subfamily: Hymenolepidinae Perrier, 1897

Genus : *Variolepis* Spasskii *et* Spasskaja, 1954

Species : *Variolepis podicepsi* n. sp.

(Fig 1-5 PP 188 )

Three, out of nine little grebs, Padiceps ruficallis (Pallas) examined at Jhansi, was found infected with twenty eight cestodes of the present form. Morphological studies of the cestodes revealed them to belong to the genus varialepis Spasskii et Spasskaja, 1954 of the subfamily Hymenolepidinae Perrier, 1897, family Hymenolepididae Railliet et Henry, 1909.

Cestodes measure 75-105 cm in length and 0.528 in maximum breadth as seen in gravid proglottids.

Proglottids broader than long and craspedote.

Scolex measures 0.144-0.252x0.072-0.228 (0.183x0.150). Suckers four, oval to round, unarmed measure 0.042-0.078x0.042-0.072 (0.060x0.057). Rostellum armed measures 0.066-0.204x0.064-0.090 (0.135x0.082). Rostellar hooks ten in number, arranged in a single row measure 0.0576-0.0640 (0.068) in length. Handle, 0.0320-0.0401 (0.0361); guard, 0.0164-0.0256 (0.0240) and blade, 0.0206-0.0304 (0.0280) in length.

Neck measures 0.354-0.390x0.132-0.156 (0.372x0.144). Immature proglottids measure 0.018-0.030x0.180-0.348 (0.024x0.264); mature proglottids measure 0.048-0.072x0.348-0.444 (0.060x0.396) and gravid proglottids measure 0.072-0.096x0.432-0.528 (0.084-0.480).

Testes 3 in number 1 poral 2 aporal, oval to round measures 0.012-0.015x0.012-0.021 (0.014x0.018). Cirrus pouch elongated measures 0.216-0.294x0.012-0.030 (0.255x0.021) and well past the poral ventral longitudinal excretory canal reaches upto the 2/3rd of the proglottids width. Cirrus armed measures 0.030-0.078x0.006-0.012 (0.054x0.009).Internal and external seminal vesicles absent.

Female genitalia slightly aporal. Ovary bilobed 0.006-0.012x0.042-0.072 0.006-0.057).Vitelline gland postovarian,compact measures 0.006-0.009x0.018-0.024 (0.008x0.021). Vagina posterior to cirrus pouch measures 0.006-0.015(0.011)in diameter. Receptaculum seminis measures 0.018-0.036x0.006-0.012 (0.027x0.009).

Genital atrium measures 0.006-0.018 (0.012) wide and 0.006-0.030 (0.018) in deep. Genital openings unilateral and located in the anterior half of the proglottid margin.

Uterus sac like measures 0.036-0.072x0.354-0.450

(0.054x0.402), extend beyond the limits of ventral longitudinal excretory canals. Eggs measure 0.0080-0.0160x0.0080-0.0193 (0.0120x0.0136). Unchospheres measure 0.0064-0.0112x0.0080-0.0128(0.0088x0.0101).

Ventral longitudinal excretory canals measure
0.006-0.018 (0.012) in diameater.

### Discussion

The present form comes closer to Variolepis
hughesi (Webster, 1947) Yamaguti, 1959; Variolepis
passerus Tewari,1987 ( unpublished); Variolepis
planestici (Mayhew, 1925) Spasskii et Spasskaja, 1954;
Variolepis tristis Tewari,1987 (unpublished thesis).
Variolepis variabilles (Mayhew,1925) Yamaguti, 1959 and
Variolepis victoriata (Inamder,1934) Spasskii et
Spasskaja,1954.

present form differs in having longer worms, larger rostellar hooks, smaller testes, narrower cirrus pouch, different shape of smaller ovary, smaller vitelline gland, narrower eggs and narrower onchospheres. From V. passerus Tewari, 1987 it differs in having larger worms, larger rostellar hooks, smaller testes, narrower cirrus pouch, bilobed narrower ovary, compact smaller vitelline gland, smaller eggs and smaller onchospheres. From V. planestici (Mayhew, 1925) Spasskii et Spasskaja, 1954 it differs in having larger

longer rostellar hooks, narrower testes. worms different shape of ovary, narrower eggs and narrower onchospheres. From *V. tristis* Tewari, 1987 it differs in having larger worms, wider rostellum, greater number of larger rostellar hooks, narrower testes, different extension of smaller cirrus pouch, different shape of narrower ovary, smaller vitelline gland, narrower eggs and narrower onchospheres. From V \_variabillis (Mayhew, 1925 ) Yamaguti, 1959 it differs in having smaller wider rostellum, larger rostellar hooks, different extension of cirrus pouch, different shape of ovary. From *V. victoriate* (Inamdar, 1934)Spasskii *et* Spasskaja, 1954 it differs in having narrower worms, larger rostellar hooks, wider testes and varied extension of larger cirrus pouch, different shape of narrower ovary, smaller eggs and narrower onchospheres.

In the light of the above discussion it is proposed to accommodate the present form as a new species, Variolepis podicepsi n.sp.

Host : Padiceps ruficallis (Pallas)

Habitat : Intestine

Locality : Jhansi

Holotype : Department of Zoology,

Bipin Bihari (P.G.) College,

Jhansi.

Comparison of the characters of the species closer to Veriolepis podicepsi n. sp.

TABLE 19

	V.hughesi (Webster, 1947 yamaguti, 1959	V. passerus Tewari, 1987	V.plane stici (Mayhew 1925) spasski et spasska 1954	Tewari, 1987 i	llis (May- hew, 1925)	V.victoriata (Inamdar 1934) Spass kii et spa- sskaja, 1954	n. sp.
Size	37-50x1.0	10-15x1.1	10-35x 0.5-1.5	21-34x1.4	3.0x1.0	60x1.35	75-105×0.52
Scolex dia.	0.144-0.173	0.23-0.25	0.2	0.154-0.198	0.2	0.2	0.072-0.228
Suckers dia	.0.064-0.082	0.08-0.09	-	0.042-0.076	0.08	0.07	0.042-0.072
Rostellum	0.04-0.054	0.05-0.07 к 0.04-0.06	nuis	0.07-0.084 x 0.03-0.04	0.02	0.212x0.087	0.066-0.204x 0.064-0.090
Rostellar Na hooks	10	10	10	8	10	10	10
	0.014-0.015	0.014-0.016 taenia like	0.014	0.017-0.02 cheli form	0.02-0.022	0.0228-0.03	0.057-0.064 fraternoid
Testes dia.	0.124-0.164	0.12-0.17 aporal testes reaches upto VLEC	0.06- 0.08	0.028-0.098x 0.056-0.112 poral and apo testes reache near VLEC	oral	0.014	0.012-0.021 aporal testes crosses the VLEC
Cirrus pouch		0.17-0.24 x 0.04-0.07	-	0.18-0.2 x 0.03-0.04	•	0.21x0.043	0.216-0.294 x 0.012-0.03
xtension	53	Crossing the VLEC		upto or cross the VLEC	width of	upto mid line of pro d glottid	upto 2/3rd of the proglottid width i.e., cross the VLEC
vary idth	0.278-0.4 bilobed or trilobed	0.2-0.22 lobulated fan shaped	irregu- lar an	0.098-0.294 bilobed each lobe further labulated	- lobed	0.17	0.006-0.012 x 0.042-0.072 bilobed

A.	V.hughesi (Webster, 1947 yamaguti, 1959	v. passerus Tewari, 1987	v.piane stici (Mayhew 1925) spasskii et spasskaj 1954	Tewari, 1987	llis (May- hew, 1925)	(Inamdar n 1934) Spass kii et spa- sskaja, 1954	
vitelline gland	0.078-0.102	0.05-0.08 x 0.08-0.10 variously lobed	_	0.028-0.056 x 0.042-0.13 variously lobed	- 12		0.006-0.009 x 0.018-0.024 compact
Receptacul seminis	T# -	present	-	absent	-	-	present
Egg dia.	0.047-0.05	0.04-0.07	0.035	c 0.02-0.049	-	0.048x0.045	0.0080-0.0160 x 0.0080-0.0193
Onchosphe	res0.031-0.033 0.026-0.08	x 0.02-0.04	0.032	x 0.014-0.02	8 -	0.019	0.0080-0.0128

V.plane

V. passerus

V.hughesi

V.trists V.variabi- V.victoriataV.podicepsi

# Comparison of the characters of the Marioleois latin sp. and Varioleois ocdiceosin.so.

	V. lacinuso.	Maddichosin.er
	45-55id Jakir	75 4 (5×0, ±2
Ecole dia.	C. (Wind), 210	A control of the cont
Jan dime	<u> </u>	0.470-1,077
Response Survey	9. 1.1 <b>8</b> -0. 11550. 172 -0. 0 <del>0</del> 0	0.066-0.00490.0044 -0.060
Fostalism Hocks		
A().	€ 45.	\$ 13
V., 208 (2017)	0,648-0,060 11 Bhasa	O.CETT-G. 1444 Fratient oud
Tamenae Clea	).024-0 (Z4 in thems.wrse how	o.cliroldi adonal baster indseed one VLED
the charge of the second of the charge of th	0.195-0.15520.912 -0.035	0.036-0.194x0.012 -0.030
extensi in	media width of the proglettid	unto 2/3rd of the croglottid width ie. prosses the 4/EC
Ovany	0.012-0.038x0.132 -C.181 transversely elong- ated	0.006-0.011:0.042- 0.071 b:lobed

V.lalin.sp.

V.pedicensin.sp.

Witelline oland

0.006-0.012x0.024 0.036

0.004-0,009×0,019 0.024

Secontaculum shaent serinis

present

Egg dia.

0.015-0.021×0.013 -0.022

0.0090-0.0160x0.00**9**0

-0.0193

Onchospheres

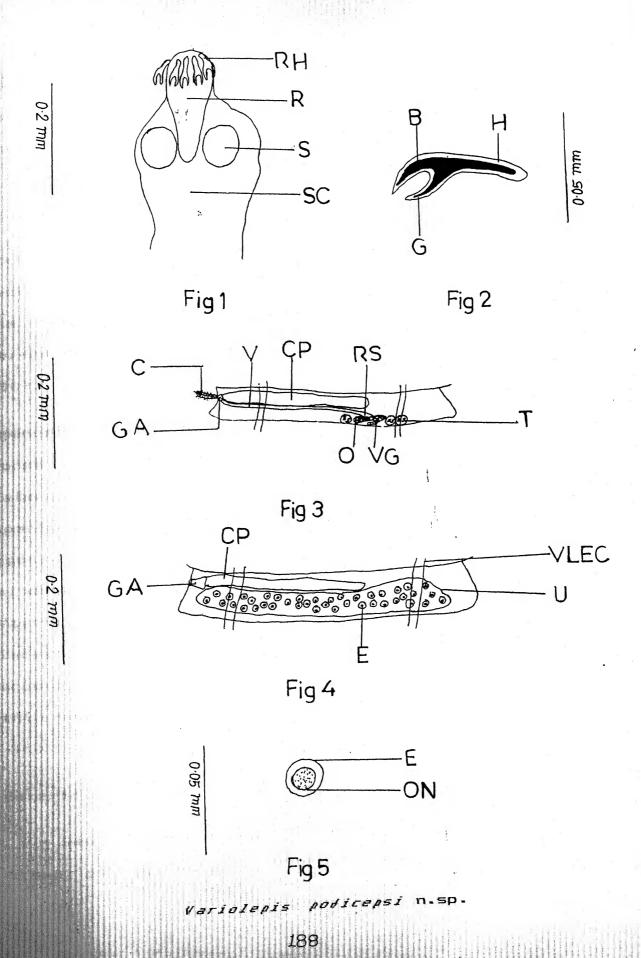
0.006-0.013x0.007 -0.012

0.0020-0.0128

#### Variolepis podicepsi n.sp

Fig-1	Scolex (10×10)
Fig-2	Rostellar hook (10x45)
Fig-3	Mature proglottid (10x10)
Fig-4	Gravid proglottid (10×10)
Fig-5	Egg (10x45)

Abbreviations — B,blade; C,cirrus; CP, cirrus pouch; E,egg; G, guard; GA, genital atrium; H, handle; O, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; RS, receptaculum seminis; S,sucker; SC, scolex; T,testes; U,uterus; V,vagina; VG,Vitelline gland; VLEC, Ventral longitudinal excretory canal.



Family : Amabiliidae Ransom, 1909

Genus : *Unischistotaenia* n.g.

Species : Unischistotaenia pannaensis n.g. n.sp.

(Fig 1-5, PP- 198 )

One of six little grebs, *Podiceps ruficollis* (Pallas) examined at Panna (M.P.) harboured three cestodes in its intestine. The morphological studies of the cestode revealed them to belong to the new genus *Unischistotaenia* n.g. of the family Amabiliidae Ransom.

Amended diagnosis of the family: Amabiliidae Small forms with an armed rostellum. Proglottids with lateral marginal out growth upon. which the male apertures may or may not be open. Genitalia single or partly double; single genital pores unilateral or alternate regularly or irregularly alternating. Vaginal aperture communicating with excretory vessel or lacking but some times replaced in function by an accessory canal which opens to the outside. Eggs with a thin transparent shell. Parasites of birds.

### Unischistotaenia n.g.

Generic diagnosis.

Small sized worm, rostellum armed with a single crown of 12 rostellar hooks, handle long, blade and

guard approximately equal. Suckers unarmed. Proglottids extremely craspedote. Protandrous. Single set of genitalia per proglottids. Testes 34-55 in number, oval to round, arranged in two groups on each side of female genitalia. Internal seminal vesicle present, unarmed cirrus. Male genital pore unilateral. Ovary bilobed and further lobulated. Vitelline gland transverse tube like. Vagina absent. Receptaculum seminis opens at the anteromid width of the next proglottids provided by an accessory canal which opens on both flat surfaces Uterus sac like which occupies the whole gravid proglottid. Parasites of aquatic birds.

Unischistotaenia pannaensis n.g., n. sp.

Cestodes measures 35-39 cm in length and 3.061 in maximum width as seen in the gravid proglottids. Proglottids broader than long and craspedote.

Scolex measures 0.589-0.604x0.989-0.1048 (0.597x1.014). Suckers four, oval to round measure 0.272-0.288x0.264-0.299 (0.270x0.276). Rostellum broader than long measures 0.210-0.280x0.498-0.566 (0.245x0.532). Rostellum provided with 12 rostellar hooks. Rostellar hooks measure 0.121-0.159 (0.140) in length. Each rostellar hook contains a handle, 0.084-0.118 (0.098); a blade 0.034-0.041 (0.038) and a guard, 0.034-0.048 (0.041) in length.

Neck very short measures 0.144-0.165x0.722-0.786 (0.151x0.76). Immature proglottids measure 0.024-0.085x0.738-1.785 (0.063x1.265); mature proglottids measure 0.085-0.680x1.531-3.061 (0.382x2.295) and gravid proglottids measure 0.544-0.804x2.211-3.061 (0.695x2.864).

Testes protandrous 34-55 in number oval to round, arranged in two groups on each side of female genitalia. Each poral and aporal group contains 16-20 (18) and 18-35 (27) testes respectively. Testes measures 0.021-0.052×0.021-0.052 (0.037×0.037). Cirrus pouch club shape measure 0.098-0.255×0.017-0.119 (0.117×0.068) never reaches upto the ventral longitudinal excretory canal. Internal seminal vesicles measure 0.048-0.168×0.017-0.060 (0.108×0.039). External seminal vesicle absent.

Female genitalia median. Ovary bilobed and each lobe is further lobulated measureing 0.025-0.187x0.085-0.340 (0.106x0.212), attains maturity after the disappearance of male organs. Vitelline gland postovarian measures 0.017-0.085x0.051-0.323 (0.051x0.187). Vagina absent. Receptaculum seminis measures 0.034-0.204x0.051-0.187 (0.119x0.119), located at the anteriormid width of proglottid, provided by accessory canal which opens anterior to cirrus pouch.

Accessory canal measures 0.012-0.036 (0.024) in diameter. Medial duct connects the receptaculum seminis of each proglottids which measures 0.021-0.071 (0.051) in diameter.

Genital atrium measures 0.022-0.042 (0.032) deep and 0.021-0.066 (0.039) wide. Male genital pores unilateral

located in the anterior half of the proglottid margin.

Uterus an irregular sac like structure measures 0.204-0.816x0.255-2.551 (0.510x1.401) extend beyond the limits of ventral longitudinal excretory canals. Eqgs measure 0.012-0.024x0.012-0.024 (0.018x0.018). Onchospheres measure 0.005-0.012x0.005-0.012 (0.009x0.009).

Ventral longitudinal excretory canals measure 0.012-0.048 (0.031) in diameter.

### Discussion

Schmidt, 1986 has included five genera in the family Amabiliidae Ransom, 1909 while the present form comes closer to *Diporotaenia* Spaskaja, Spasskii *et* Borgarenko 1971; *Amabilia* Diamare, 1893; *Jatria* Kowalewski, 1904; *Schistotaenia* Cohn, 1900 and *Pseudoschistotaenia* Fotedar *et* Chisti, 1976.

The present form differs from Diporotaenia Spasskaja, Spasskii *et* Borgarenko, 1971 in having unilateral genital pores, testes in two groups, median bilobed ovary, presence of internal seminal vesicle, absence of external seminal vesicle and irregular sac like uterus. From Amabilia Diamare, 1893 in having unilateral genital pores, unarmed cirrus, bilobed ovary an irregular sac like uterus. From *Tatria* kowalewski, 1904 in having unilateral genital pores, cirrus pouch never reaches the ventral longitudinal excretory canal, unarmed cirrus, different disposition of testes and absence of external seminal vesicle. From Schistotaenia cohm 1900 in having unilateral genital pores, cirrus pouch never reaches upto the ventral longitudinal excretory canal, unarmed cirrus, testes in two groups, bilobed ovary, presence of internal seminal vesicle and absence of external seminal vesicle and uterus irregular sac like. From Pseudoschistotaenia Fotedar et Chisti, 1976 in having unilateral genital pores, cirrus pouch never reaches upto the ventral longitudinal excretory canal, testes in two groups, presence of internal seminal vesicle, absence of external seminal vesicle and irregular sac like uterus.

In the light of above discussion it is proposed to accommodate the present form as a new genus and a new species, Unischistotaenia pannaensis n.g., n.sp.

Host : Podiceps ruficallis (F)

Habitat : Intestine

Locality : Panna (M.P.)

Holotype : Department of Zoology

Bipin Bihari (p.G.) College, Jhansi

Comparison of the new genus Unischistotaemia n.g. from various genera

Table 21

	Diporota— enia Spasskaja, Spasskii e Borgarenko 1971	Diamare, 1893 t	Tatria Komalamaski, 1904	Schistotaenia . Cohn. 1900	Pseudoschi- stotaenia, Fotedar et Chisti, 1976	Unishistotaenia n.g.
Genital pores	regularly alternating	Bilateral	regularly alternating	irregularly alternating	regularly alternating	Unlateral
Cirrus Pouch	-	not reach- ing VLEN	crosses the both VLEC	Crosses the VLEC	Crosses the VLEC	never reaches the VLEC
Cirrus	Unarmed	Armed	armed	armed	unarmed	unarmed
Testes	in single row	two sub- median field	few post ovarian	single field	numerous surrounding ovary	two groups
Ovary	slightly aporal, with few lobes	dentritic median	bilobed median	lobated but not dentrictid	bilobed median	bilobed and further tabu- lated median.
IVS	absent	present	present	absent	absent	present
EVS	present	absent	present	present	present	absent
Uterus	transverse lobated sac	net work of tube like	?.	transverse sac	lobated	an irregular sac like

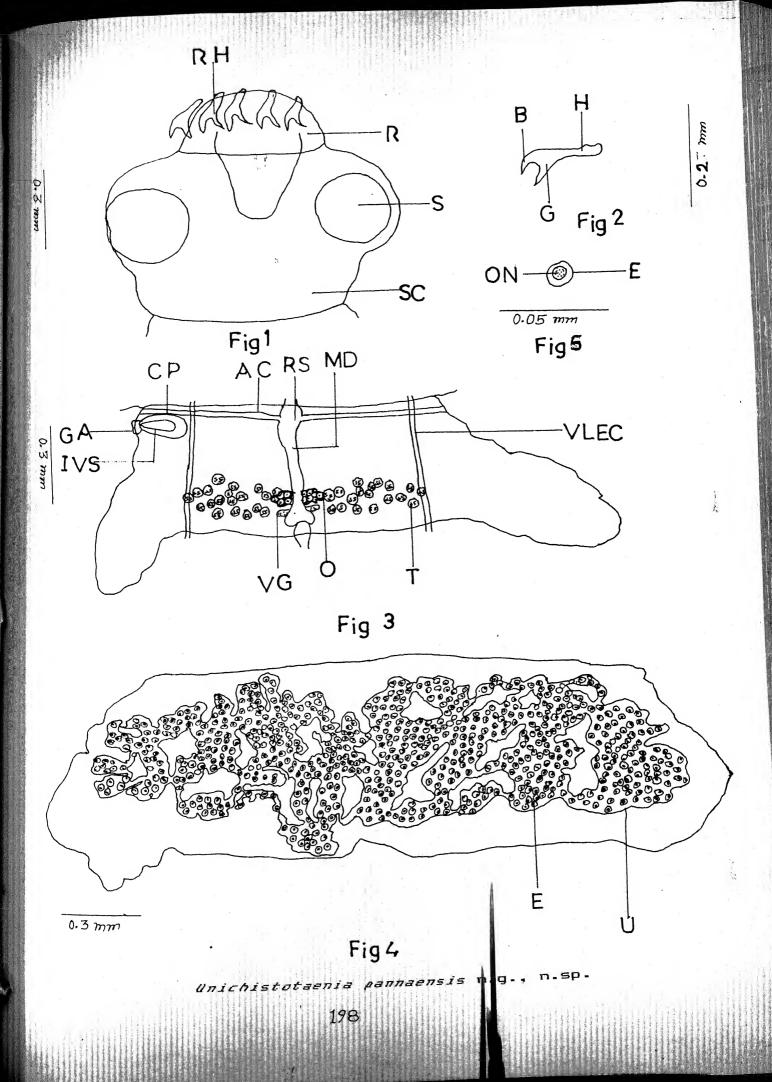
### KEY TO THE VARIOUS GENERA IN AMABILIIDAE

1a. Rostellum much enlarged. fimbriated, unarmed .... Diporotaenia 1b. Rostellum otherwise ...... 2a. Male organs doubled in each proglottid, female organs single, ovary & vitellarium dendritic 2b. Male organs single per proglottid, female organs not dendritic 3a. Accessory canal opening from seminal receptacle on one surface or not at all. Male pores regularly alternate. Testes few 3b. Accessory canals opening from seminal receptacle on both flat surface lestes numerous 4a. Genital pores alternating irregularly, seminal receptacle not continuous from one proglottid to another .....Schistotaenia 4b. Genital pores alternating regularly, seminal receptacle continous from one proglottid to another .... Pseudoschito 4c. Genital pores unilateral, semina receptacle continuous from one pro-.... Unischistot aenia n.q. glottid to another

## Unischistotaenia pannaensis n.q., n.sp.

Fiq	1	Scolex (5x10)
Fig i	2	Rostellar hook (10x10)
Fig :	3	Mature proglottid (5x10)
Fig •	4	Gravid proglottid (5x10)
Fig :	5	Egg (10x45)

Abbreviations :- AC, accessory canal; CP, cirrus pouch; E. egg; G, guard; GA. genital atrium; H, handle; IVS, internal seminal vesicle; MD, medial duct; O, ovary; ON, onchospheres; R,rostellum; RH, rostellar hook; RS, receptaculum seminis; S, sucker; SC, scolex; T, testes; U, uterus; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.



Order : Cyclophyllidea Ben. in Braun ,1900

Family : Diploposthidae Poche, 1926

Genus : Podiposthe n.g.

Species : Podiposthe bridyaii n.g., n.sp.

(Fig 1-5, PP 208 )

Out of eight little grebs, Podiceps ruficollis (Pallas) examined at Baruasagar, District Jhansi (U.P.) one was found infected with single cestode in its intestine. The morphological studies of the cestode revealed them to belong to the geuns Podiposthe n.g. of the family Diploposthidae Poche, 1926.

Amended diagnosis of the family Diploposthidae: Testes numerous in single field, male genitalia double, female genitalia single. Vagina present with vaginal aperture. Receptaculum seminis absent. Uterus sac like.

### Podiposthe n.g.

craspedote or acraspedote. Male with two sets of reproductive organs per proglottid. Cirrus pouch crosses the poral ventral longitudinal excretory canals. Internal seminal vesicle present, external seminal vesicle absent. Cirrus armed. Testes numerous in one median group. Female genitalia median single in each proglottid. Ovary on poral side. Vitellaria

compact, postovarian, vagina unilateral Receptaculum seminis absent. Uterus sac like. Parasites of Podicipediformes.

### Podiposthe hridyaii n.g., n.sp.

Cestodes measures 14.1 cm in length and 3.741 in maximum breadth as seen in the mature proglottids. Strobila consists of numerous proglottids. All proglottids broader than long, and some craspetode; and other acraspedote in immature proglottids.

Scolex measures 0.408x0.624 (0.515). Suckers four, oval, unarmed measure 0.162-0.175x0.098-0.121 (0.169x0.111). Rostellum armed. longer than broad measures 0.384x0.175. Rostellum bears 14 rostellar hooks arranged in single row measure 0.074-0.092 (0.072) in length. Hook contains handle. 0.0320-0.0352 (0.0336); blade 0.0352-0.0401 (0.0376) and guard, 0.0032-0.0048 (0.0040) in length.

Neck absent. Immature proglottids measure 0.017-0.051x0.595-0.850 (0.034x0.043); mature proglottids measure 0.051-1.02x0.918-3.74 (0.535x2.329) and gravid proglottids measure 0.765-1.530x1.320-3.570 (1.147x2.445).

Male genitalia double show protrandrous condition.

Testes number 70-100 (85), oval to round, distributed in one

group measures 0.012-0.036x0.012-0.036 (0.024x0.024). never crosses the ventral longitudinal excretory canals. Cirrus pouch club shaped, crosses the Ventral longitudinal excretory canal measures 0.170-1.105x0.017-0.289 (0.637x0.153). Cirrus armed measures 0.051-0.595x0.012-0.204 (0.323x0.108). Internal seminal vesicles measure 0.051-0.255x0.034-0.204 (0.153x0.119). External seminal vesicles absent.

Female genitalia single. Ovary transverse tube like measures 0.034-0.068x0.051-0.289 (0.051x0.170). Vitelline gland compact, postovarian measures 0.012-0.024x0.024-0.048 (0.018x0.036). Vagina measures 0.011-0.024 (0.017) in diameter. Receptaculum seminis absent.

Genital atrium measures 0.024-0.180 (0.102) in width and 0.036-0.120 (0.078) in depth. Genital pores bilateral, located in the anterior or slightly middle half of the proglottid width.

Uterus sac like measures 1.020-1.360x0.624-3.060 (1.190x1.842). never extend beyond the limits of the ventral longitudinal excretory canals. Eggs measure 0.012-0.036x0.012-0.036 (0.024x0.024). Onchospheres measures 0.0064-0.0128x0.0062-0.0126 (0.0112x0.0110).

Ventral longitudinal excretory canals measures 0.012-0.036 (0.024) in diameter.

## Discussion

Yamaguti, 1959 has included only three genera viz. Diplophallus Fuhrmann, 1900; Diploposthe Jacobi, 1896 and Jarduqia Southwell et Henry, 1929 in the family Diploposthidae Poche, 1926.

The present new genus differs from Diplophallus Fuhrmann, 1900 in having testes in single field, different extension of cirrus pouch, armed cirrus, absence of vas deferens, different shape of ovary, simple vagina and sac like uterus with few out growths. From Diploposthe Jacobi, 1896 in having greater unmber of rostellar hooks, greater number of differently disposed testes, absence of external seminal vesicle. larger cirrus pouch, shape of ovary and uterus never crosses the ventral longitudinal excretory canals. From Vardugia Southwell et Helmy 1929. It differs in having greater number of rostellar hooks, greater number of testes, absence of external seminal vesicle, different shape of ovary different shape and disposition of vitelline gland, single vagina and uterus never crosses the ventral longitudinal excretory canals.

In the light of above discussion the present form is accommodated as a new genus, <code>fodipostne</code> n.g. and a new species <code>fodiposthe</code> <code>hridyalii</code> n.g., n.sp. The species is named in the honour of an eminent Indian

parasitologist, Dr H. N. Tripathi, I.D.P.L., Hyderahad.

Host : *Podiceps ruticollis* (Pallas)

Habitat : Intestine

Locality : Baruasagar, Jhansi

Holotype : Department of Zoology

Bipin Bihari (P.G.) College, Jhansı

Comparison of the new genus Podiposthen.g. from various genera

Table 22

	Diplophallus : Fuhrmann, 1900	Diploposthe Jacobi. 1896	Jarduqia  Soutwell  and Hilmy, 1929	fodiposthe n.ç.
Fostellar	nde met men men men met som men utte men utte som vite det utty utte kap und -em kup men vigt dags megkade.  Til de men vite men vite men vite som	10	10	14
hooks		· ·	**	4-7
Testes	Numerous, divided into two lateral groups each group forming a bunch around was deferens	3-7, postero dorsal to ovary	2-6. dorsal medial to excretory stems.	75–100 in simple group between the cirrus pouch
Internal seminal vesicle	Present	present, club- shaped	present	present. Bean shaped
External seminal vesicle		present	present	absent
Cirrus pouch	auscular, saall	muscullar mmall	elongated	elongated
Cirrus spines	absent	cirrus large armed with double root ed hooks.	prostatic cells and solnose circus	Cinnus anmed
Vis defenens	3~96957	**	-	absant

Not start that they have date date later than they	Diplophallus Fuhrmann, 1900	Diploposthe Jacob: 1896	Jarduqia Soutwell and Hilmy. 1929	Podiposthe n.g.
Ovary	Ventral. median large two winged	Ovary two winged	median multi- lobulate, occ upying middle third of pro- glottids	small, trans- verse tube like median
Vitelline gland	small, posterodo rsal	Compact, both median	deeply lobed. median. poster poorsal to ovary.	small. posto- varian.
Vagina	atrophied	opening into genital atri- um ventral to cirrus pouch.	Vaginae double each opening into genital atrium ventral to cirrus pouch	Vagina single. open. into ge- nital atrum posterior to cirrus pouch
Uterus	first a transverse tube, later on sac like with numerous out growths	Uterus a trans verse tube exta- nding whole width of medulla crosses the ventral longi- tudinal excretory canals	*	Sac like with: the limits of the ventral longitudinal excretory canals. never

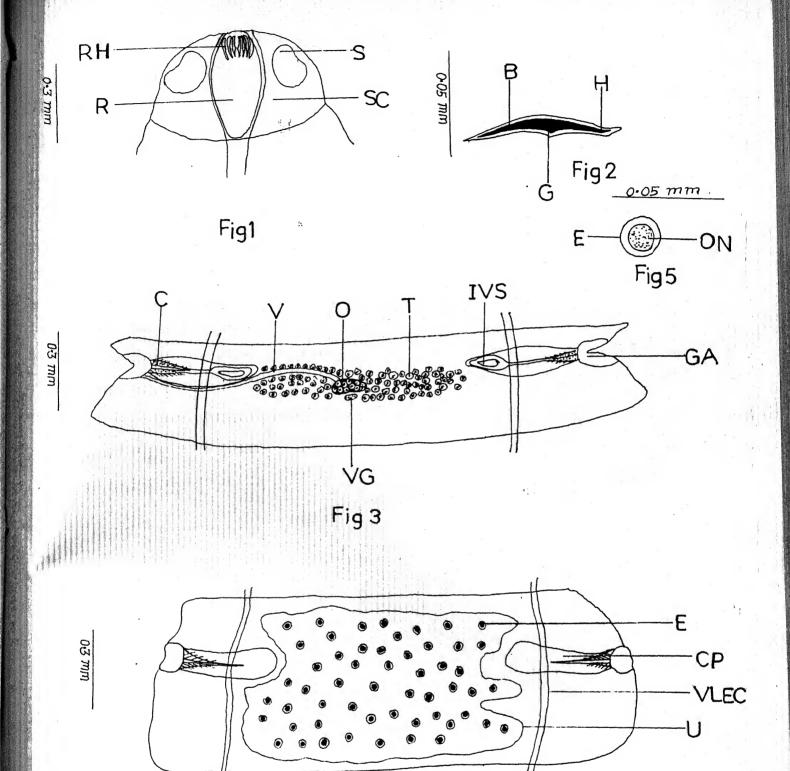
# KEY OF THE VARIOUS GENERA OF THE FAMILY DIPLOPOSTHIDAE POCHE, 1926

ia.	Vaginal aperture absent	£.
16.	Vaginal aperture present	3
2a.	Male and female genitalia single	Acoleus
26.	Male genitalia double, female genitalia single	Usplophallus
За.	Testes arranged in a single median field, few in number	Diplopostne
3b.	Testes arranged in two submedian fields	lardugia
3⊏.	Testes arranged in a single field, numberous in number	Podiposthe n.g.

### Podiposthe hridyaii n.g., n. sp.

Fig	i	Scolex (5x10)
Fig	2	Rostellar hook (10x45)
Fig	3	Mature proglottid (5x10)
Fig	4	Gravid proglottid (5×10)
Fig	5	Egg (10×45)

Abbreviations :- B, blade; C, cirrus; CP, cirrus pouch; E, egg; G, guard; GA, genital atrium; H, handle; IVS, internal seminal vesicle; O, ovary; ON, onchospheres; R, rostellum; RH, rostellar hook; S, sucker; SU, scolex: I, testes; U, uterus; V, vagina; VG, vitelline gland; VLEC, ventral longitudinal excretory canal.



*Podiposthe hridyali* n.g., n.sp.

Fig 4

Family : Dioecocestidae Southwell, 1930

Subfamily: Dioecocestinae Fuhrmann, 1930

Genus : Jhansizia Rani, Daisy : Tewari and Khare. 1995

Species : Jhansizia tikamparhensis n. sp.

(Fig male: 1-3 PF 215 ) (Fig female: 1-4 PF 217 )

Six little grebs *Policeps ruticallis* (Pallas) examined at Niwari, District Tikamgarh, (M.P.) two were found infected with four cestodes, one male and one female in each host. The cestodes were present in the intestines of the host. The morphological studies of the cestodes revealed them to belong to the genus *Jhansizia* Daisy, Rani, Tewari and Khare, 1995 of the subfamily Dioecocestinae Fuhrmann, 1936; family Dioecocestidae Southwell, 1930.

Ihansizia tikamparhensis n. sp.

### Male

Cestodes measure 172-191 cm in length and 2.891 in maximum width as seen in mature proglottids. Strobila consists of numerous proglottids. All proglottids are craspedote and broader than long.

Scolex measures 0.488-0.510x0.652-0.716 (0.401x0.534). Suckers unarmed, oval to round measure 0.084-0.156x0.060-0.144 (0.120x0.120). Rostellum unarmed longer than broad, protruded measures 0.308-0.336x0.048-0.180 (0.222x0.104). Rostellar hooks absent.

Neck absent. Immature proglottids measure 0.017-0.068x0.681-0.935 (0.0425x0.807) and mature proglottids measure 0.102-1.19x0.935-2.89 (0.646x1.912).

Male genitalia double. Testes 45-100 (75) in number, oval to round in single field measures 0.024-0.068x0.024-0.068 (0.046x0.046). reaches upto ventral longitudinal excretory canals, cirrus pouch measures 0.255-1.191x0.057-0.425 (0.722x0.235). crosses ventral longitudinal excretory canal. Armed cirrus measures 0.171-0.595x0.102-0.204 (0.382x0.153). Cirrus spines measure 0.0042-0.0105 (0.0075) in length. Internal seminal vesicle present, external seminal vesicle absent.

Genital atrium measures 0.149-0.311 (0.144) deep and 0.051-0.255 (0.153) wide. Genital openings bilateral, located in the anterior half of the proglettid margin.

Dorsal longitudinal excretory canals measure 0.017-0.051 (0.034) and ventral longitudinal excretory canals measure 0.017-0.042 (0.034) in diameter.

### Female

Cestodes measure 140-225 (185) in length and 4.931 in maximum width as seen in the gravid proglottids are broader than long and craspedote.

Scolex measures 0.456-0.540x0.801-1.008 (0.348x0.654). Suckers unarmed.. oval to round measure

0.092 - 0.192 x 0.084 - 0.228 (0.132x0.156). Rostellum unarmed. longer than broad, protruded measures 0.108-0.288x0.084-0.252 (0.198x0.168). Rostellar hooks absent.

Neck absent. Immature proglottids measure 0.051-0.057x0.935-1.191 (0.034x1.062): mature proglottids measure 0.121-0.646x0.851-5.101 (0.408x2.975) and gravid proglottids measure 0.34-0.68x4.251-4.931 (0.510x4.591).

Female genitalia single per proglottid. Ovary bilobed, slightly aporal measures 0.051-0.085x0.085-0.204 (0.068x0.144). Vitelline. gland compact, postovarian measures 0.0136-0.024x0.017-0.034 (0.0158x0.0255). Vagina measures 0.0126-0.034 (0.030) in diameter, divisible into a copulatory and conducting regions. Copulatory region measures 0.024-0.072x0.108-0.180 (0.048x0.144) while conducting region measure 0.012-0.026 (0.019) in diameter. Receptaculum seminis measures 0.034-0.04x0.017-0.034 (0.0491x0.0255).

Uterus simple sac like without diverticulaemeasures 0.312-0.552x3.48-4.08 (0.432x3.78), extend
beyond the limits of ventral longitudinal excretory
canals. Edgs measures 0.015-0.036x0.018-0.036
(0.027x0.033). Unchospheres measure 0.00480.0130x0.0048-0.0131 (0.0089x0.0089).

Dorsal longitudinal excretory canals measure 0.017-0.051 (0.034) and ventral longitudinal excretory canals measure 0.017-0.051 (0.034) in diameter.

### Discussion

The present form comes closer to Jhansizia
jhansiensis Rani Daisy, Tewari and Khare 1995.

The male worm differ from *Jhansizia jhansiensis* Rani Daisy; Tewari and Khare, 1995 in having narrower worms, narrower scolex, narrower suckers, smaller protruded rostellum, larger number of testes which reaches upto the ventral longitudinal excretory canals. larger cirrus pouch crosses the ventral longitudinal excretory canals, excretory canals, presence of internal seminal vesicle, genital atrium in the anterior region. The female worm differs in having narrower worms, wider suckers, wider protruded rostellum, smaller vitelline gland, narrower vagina, smaller receptaculum seminis, simple sac like uterus without diverticulae and smaller eggs.

In the light of above discussion the present form is proposed to accommodate as a new species Jhansizia tikamparnensis n. sp.

Host : Podiceos ruticollis (Fallas)

Habitat : Intestine

Locality : Niwari, likamgarh (M.F.)

Holotype : Department of Zoology,

Bipin Bihari (P.G.) College, Jhansi

## Comparison of characters of the species closer to Jhansizia tikamqarhensish. sp.

Jhansizia j	hansiersis	Jhansizia tikamparhensis
Rani Daisy,	Tewari & Ehare	n. sp.
1995.	Male	
Siza	11.5-15.0x4.690	17.2-19.1x2.891
Scolex	0.434-1.2x0.56-1.0	0.4 <del>89</del> -0.510x0.452-0.715
Buckers	0.1-0.17x0.154-0.21	ŭ, 0 <b>8</b> 4−0. <b>15</b> 6×0. 0 <b>60−</b> 0. 144
Rostallum	0.448-1.180x0.08-0.24	0. <b>308</b> -0.336:0.048-0.180
	invaginated	protruded
Testes		
rko.	<b>58-6</b> 0 **	45-100
sizm	0.029-0.180	0.024-0.0 <del>0</del> 8
position	Do not reach upto VLEC	reaches up to A EII
Cirrus pour	h	
#1.7e	0,400-1,13400,154-0,252	
axtension	Do not reach upto AEC	Commission of the second
Intermal		
seminal .	atoment t	100 (1 10 10 10 10 10 10 10 10 10 10 10 10 10
vesicle		
Genital atr	ilium '	
wide !!!!	0,09-0,42	The second secon
deep	6.1-0.235	O. 149+O. 311

	Female	
	13.17-16.046.776 0.420-1.1240.756-1.0 0.111-0.75-0.147-0.11 1.11-1-1.713-1.17-0.11	ed. Or 201. Block of the edge of ASS record
ilie Vitaniilie Vitani	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	7.05100.08580.085-0.074 4.015-0.074-0.017-0.034
0.0.191	기 : 기 (~~) : 15g 나타 ( ) : (^-(~~) : 1 전기 : 10 : 1450~( ) : 1 (450)	6.010-6.034 6.634-6.054-6.017-6.634
	Bac lafve. Librala bac O.VOS-3. DAT	simple sec like 0.015-0.03£

Comparison of characters of the species closer to Jhansizia tikamqarhensish. sp.

		Jhansızia tikamgarhensis
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Jhansizia jha	a la	₹ ≰ag — contract ti
Jhansizla in Rani Daisy. Te	Male	
1995.		and the state of t
-		17. 2-19. 1:(2. 591
Siza	11.5-15.0:4.690	0.495-0.510:0.651-0.716
Scolex	0.434-1.280.56-1.9	0.084-0.156:0.060-0.144
	0.1-0.17x0.154-0.21	0.308-0.336k0.045-0.100
Eurkers	0.446-1.180x0.08-0.24	protruded
Fostellum	invaginated	gurt the training
	\$3.1 A country of the	15-1(X)
Tenters	58-60	0.024-0.058
No.	0.028-0.180	reaches upto W.EE
100 1 100 Jane	Do not reach upto VEC	の意味の自動車・利車・スー・スー
cosition	Do not reality	0.255-1.191:0.057-0.425
Cirrus pouc	in the second of	Carried to the second
size		Cross the VLEC
但以也是PGICK)	Do not reach upto VLEC	
		(3) 有事的
Intermal	absent	
pertinal	4.9	
venicle	1. 2. 2. 2	0.051-0.025
Genital at	0.09-0.42	0.149-0.311
wide	11.1.0.225	Committee of the second of the
desc		
	Female	
	a-qu	many per 1 M CONT 1
		(4.0-22.5/4.971
Bite	12.2-16.0% 776	0.456-0.540;0.801-1.008
IIII Schlex	0.420-1.280.754-1.0	0.075-0.1720.084-0.238
Figure 12 Th	and the second s	0. 108-0.298x0.084-0.252
	and the state of t	And the state of the group, will
110	and the second of the second of	· · · · · · · · · · · · · · · · · · ·
	The same of the sa	0.013-0.024×0.017-0.034
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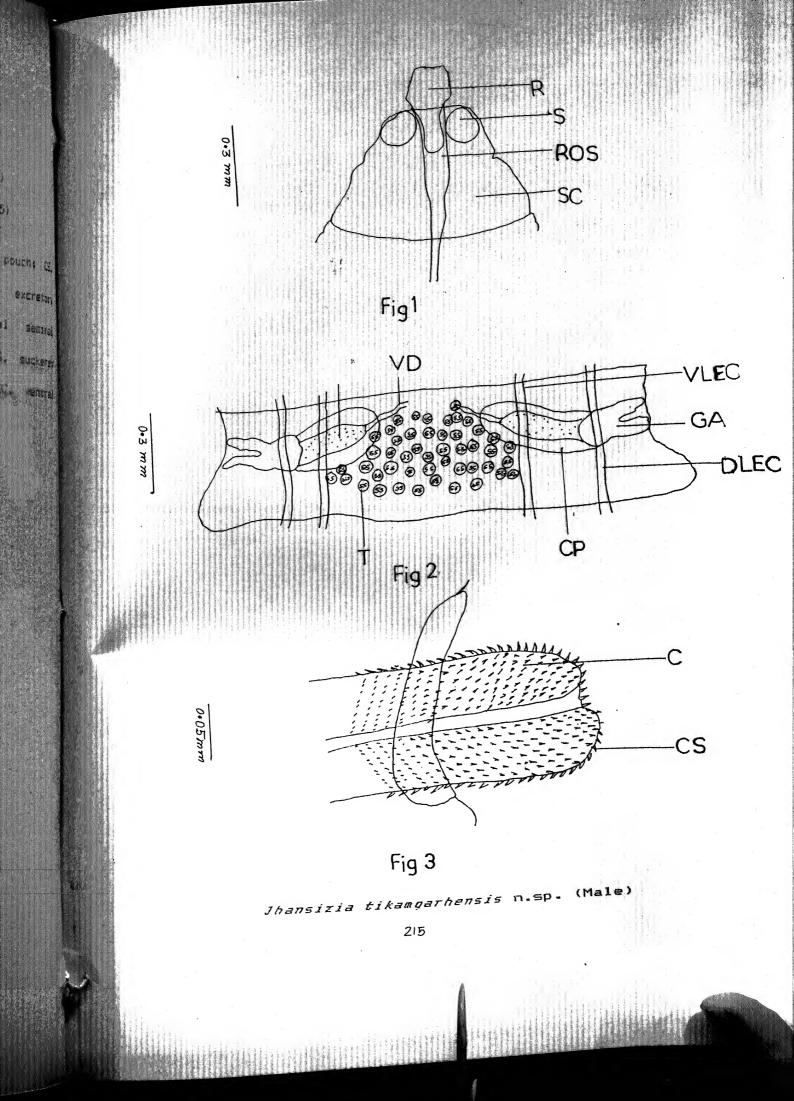
#### Jhansizia tikamparhensis n. sn.

(Male) Fig 1 Scolex (5x10)

Fig 2 Mature proglottid (5x10)

Fig 3 cirrus with spines (5x45)

Abbreviations :- C. cirrus: CP. cirrus pouch; CS, cirrus spine; DLEC, dorsal longitudinal excretory canal; GA, genital atrium; IVS, internal seminal vesicle; R, rostellum; ROS. rostellar sac: S. suckers: SC, scolex; T, testes; VD, vas deferens; VLEC, ventral longitudinal excretory canal.



### Jhansizia tikamparhensis n. 50.

(Female)	Fig 1	Scolex	(5×10)
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Fig 2 Mature proglottid (5x10)

Fig 3 cirrus with spines (5x10)

Fig 4 Egg (10x45)

Abbreviations :- COR. copulatory region; CR. conducting region; DLEC, dorsal longitudinal excretory canal: E, egg; U, ovary; ON, onchospheres; R. rostellum; RH, rostellar hook; RS. receptaculum seminis; ROS. rostellar sac; S, suckers; U, uterus; VG. vitelline gland; VLEC, ventral longitudinal excretory canal.

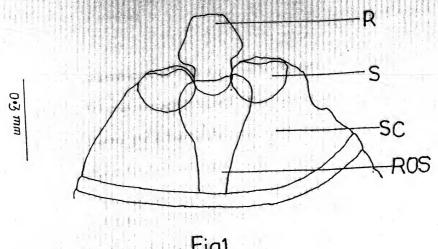
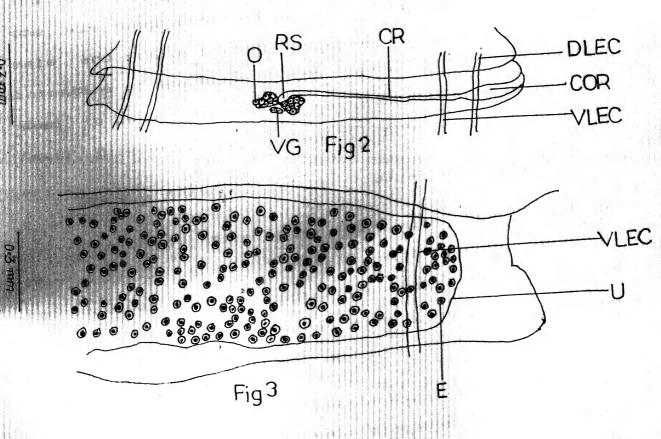
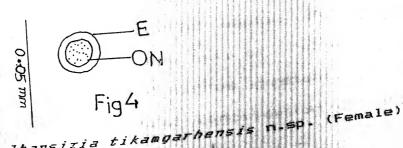


Fig1





Family : Dioecoestidae Southwell, 1930

Subfamily: Dioecocestinae Fuhrmann, 1936

Genus : Bundalkhandia n.g.

Species : Bundelkhandia ruficollis n.g., n.sp.

(Fig Male 1-4, PP 228 ) (Fig female 1-5, PP 230)

Out of seven little grebs. Podiceps ruficallis (Pallas) examined at Gharmau, District Jhansi (U.F.). one was found infected with two cestodes, with single male and single female. Cestodes were present in the intestine of the host. Morphological studies relyeated them to belong to the new genus Bundelkhandia of the family Dioecocestidae Southwell, 1930.

## Amended Alagnosis of the family Divecoestidee

Completely disections. Male with double set of reproductive organs. Female with single set of reprodutive organ. Rostellum bears two rows of rostellar hooks. Testes in single field. Uterus sac like. Eggs with embryonic hooks.

### Bundelkhandia n.g.

bears two rows of rostellar hooks. Proglottids wider than long. Male with two sets of reproductive organs per proglottid. Armed cirrus present. Cirrus pouch crosses the poral ventral longitudinal excretory canal.

Internal seminal vesicle present, external seminal vesicle absent. Testes numerous in single median group. Ovary horse shoe-shaped. Vitellaria very large, postovarian. Receptaculum seminis near the distal end of vagina. Female genital pores unilateral. Ovary and testees only present in anterior proglottids. Uterus sac like extend beyond the limits of ventral longitudinal excretory canals. Eggs with embryonic hooks. Parasites of podicepediformes.

Bundelkhandia ruficollis n.g.,n.sp.

### male

Cestodes measures 110 cm in length and 3.991 in maximum width as seen in mature proglottids. Strobila consists of a large number of craspedote and acraspedote broader than long proglottids.

Scolex measures 0.456x0.656. Suckers unarmed measure 0.096-0.216x0.048-0.144 (0.156x0.096). Armed rostellum longer than broad, protrusible measures 0.420x0.276. Rostellum bears 24 rosteller hooks, arranged in two rows. Each row bears 12 rosteller hooks. Rostellar hooks of first row measure 0.312-0.360 (0.336) and second row measure 0.240-0.264 (0.252) in length.

Neck absent. immature proglottids measure 0.017-0.048x0.481-1.480 (0.0481x1.180): mature proglottids

measure 0.196-0.315x1.870-3.990 (0.251x2.930).

Male genitalia double. Testes oval to round. 65-95 measures 0.012-0.048x0.018-0.054 number in (0.030x0.036), distributed in one group in anterior half of the proglottids within the limits of ventral longidutinal exccretory canals. Cirrus pouch, club shaped measures 0.170-1.190x0.034-0.187 (0.680x0.110). the ventral longitudinal excretory canals. crosses measures 0.170-0.680x0.017-0.170 Cirrus prominent (0.425x0.093), armed with many rows of spines. Cirrus spines measure 0.006-0.012 (0.009) in length. Internal 0.085-0.255x0.034-0.102 seminal vesicle measures (0.170x0.068), external seminal vesicle absent.

Genital atrium measures 0.048-0.420 (0.168) deep and 0.060-0.324 (0.216) wide. Genital openings bilateral, situated in the anterior half of the proglottic.

Ventral longitudinal excretory canals measure 0.012-0.048 (0.027) in diameter.

### FEMALE

Cestode measures 118 cm in length and 3.411 in maximum width as seen in the mature proglottids. All proglottids broader than long. Immature, anterior mature proglottids are acraspedote while posterior mature and gravid proglottids craspedote.

Scolex measures 0.446x0.518. Sucker four, unarmed

measure 0.094-0.132x0.024-0.052 (0.108x0.048). Rostellum longer than broad measures 0.414x0.306. Rostellum bears 28 rostellar hooks, arranged in two rows. Each row bear 14 rostellar hooks. First row of rostellar hooks measure 0.348-0.484 (0.366) in length, divisible into a handle, 0.204-0.222 (0.213); a guard 0.144-0.162 (0.153) and a blade, 0.012-0.018 (0.015) in length. Second row of rostellar hooks measure 0.192-0.240(0.216) in length, divisible into a handle, 0.102-0.126 (0.114); a guard, 0.009-0.012 (0.011) and a blade, 0.090-0.114 (0.102) in length.

Neck absent lmmature proglottids measure 0.017-0.034x0\_850-1.190 (0.025x1.020); mature proglottids measure 0.051-0.459x1.36-3.401 (0.255x2.380) and gravid proglottids measure 0.391 - 0.680 x 2.040 - 2.890 (0.535x2.460).

Female genitalia single per proglottid. Ovary measures 0.017-0.301x0.085-0.680 (0.159x0.382), slightly aporal, and lobulated, horse shoe-shaped; overlapping the anterior proglottids. Vitelline gland measures 0.017-0.204x0.034-0.255 (0.110x0.144), pear shaped costovarian. Vagina differentiated into copulatory and conducting regions. Copulatory region measures 0.136-0.255x0.017-0.051 (0.195x0.034) and conducting region measures 0.017-0.051 (0.034) in

diameter- Receptaculum seminis measures 0.060-0.144×0.024-0.048 (0.102×0.034).

Uterus sac like measures 0.450-0.725x1.801-2.250 (0.487x2.025), crosses the limits of the ventral longitudinal excretory canals. Eggs measure 0.018-0.072x0.018-0.072 (0.045x0.045), onchospheres measure 0.0076-0.029x0.012-0.032 (0.016x0.022). Embryonic hooks measure 0.0048-0.0076 (0.0072) in length.

Dorsal longitudinal excretory canals measure 0.013-0.034 (0.024) in diameter and ventral longitudinal excretory canals measure 0.015-0.034 (0.025) in diameter.

### Discussion

According to Schmidtt, 1986 the cestodes belong to the family Dioecocestidae Southwell, 1930 having completely dioecious nature and double set of reproductive organs in males and Dioecocestus Fuhrmann, 1900 and Neosinecocestus Siddiqui, 1960.

The present form differs from the genus Divercestus Fuhrmann, 1900 in having double row of rostellar hooks, presence of suckers, disposition of testes, different shape and location of ovary, different shape and disposition of vitelline glands, unilateral vagina differentiated into copulatory and

conducting regions and simple sac like uterus. From Neodioecocestus Siddiqui. 1960 it differs in having presence of rostellum, presence of rostellar hooks. testes in single field and separate temale worm.

In the light of above discussion it is proposed to accommodate the present form as a new genus Bundelkhandia n.g. and new species, Bundelkhandia ruficollis n.g., n. sp.

Host : Podiceps ruticollis (P)

Habitat : Intestine

Locality : Gharmau, Jhansi

Holotype : Department onf Zoology

Bipin Bihari (P.G.) College, Jhansi

Table 24

## Comparison of characters of Bundelkhandian.g. with Dioecocestus Fuhrmann. 1900 and NeodioecoeocestusBiddique, 1960

	Dioecocestus Fuhrmann, 1900	Neodidecocestus Siddiqui, 1960	Bundelkhandia n. g.
Rostellum	Present	Absent	Fresent
Rostellar hooks	Single row	Absent	Double row
Suckers	With or without suckers	Fresent	Present
Testes	Numerous in two submedian groups	Numerous in two submedian groups	Numerous in single field
Fanala form		Unknown	Known
DY	Lobated, transver reely elongated. slightly poral	The state of the s	Lobulated, horse shos shaped, slig- htly appract
Vitellaria	ithated. costerod orgal to ovary	and	Compact. cost tovanian. pear shaped

	Dioecocestus Fuhrmann, 1900	Neodicecocestus :::Siddiqui, 1940	Eundelkhandia n. g.
Vaçina	Irregularly alter nating ending blindly near cuticle	第二章 1 一章 2 第二章 2 第二章 2 第三章 2 章 2 章 2 章 2 章 2 章 2 章 2 章 2 章 2 章 2	Unilateral,  vagina differ entiated into conducting and copulatory regions
Utarus	Strongly lobed sac	The state of the s	Uterus sac like extending bey- ond the limits of ventral lor- gitudinal excr- etory canals
Embryonic hooks	abacnt		present

### Key to the genera of the family Divecocesticiae

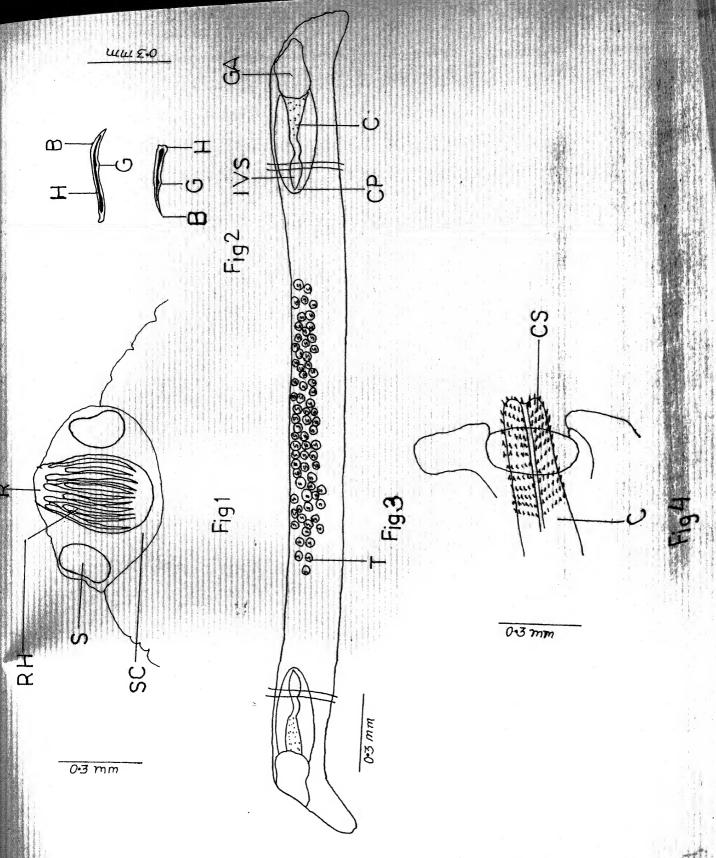
	· · · · · · · · · · · · · · · · · · ·		
1a.	Completely disecious; male double set of reproductive		2
16.	Completely or regionally di male with single set of rep organs.		3
Zа.	Scolex with armed rostellum	•••	7
2b.	Scolex lacking rostellum or	hooks Neodioecocestus	
За.	Uterus horse shoe shaped	4	
3b.	Uterus ring shaped	5	
4a.	Scolex lacking rostellum or	hooks Shiplera	
4b.	Scolex with massive rostell with minute spines	um covered Echinoshipleya	
5a.	Rostellum armed. Strobila cor regionally disections	ompletely Byrocoelsa	9
5b •	Rostellum unarmed	6	
	Completely disectous testes (65 to 75) yagina present	numerous lnfula	
4	Regionally dioecious. Test (about 8). Vagina absent	es few ?seudushiplya	
7a.	Scolex with single row of r hooks	ostellar <i>Dinecocestus</i>	
7b.	Scalex with double row of r	ostellar <i>Bundelkhandia</i> n.c	<b>3.</b>

## Bundelkhandia ruficollis n.g., n.sp.

(Male)

Fig 1	Scolex (5x10)
Fig 2	Rostellar hooks (5x10)
Fig 3	Mature proglottid (5x10)
Fig 4	Cirrus with spines (5x10)

Abbreviations: - B. blade: C. carrus: Ch. carrus bouch: CS. carrus spine: G. quard: GA. penatal atraum; H. handle; IVS. internal seminal vesacle: R. rostellum: RH. rostellar hook: S. sucker: SC. scolex: T. testes: VLEC. ventral longitudinal excretory canal.



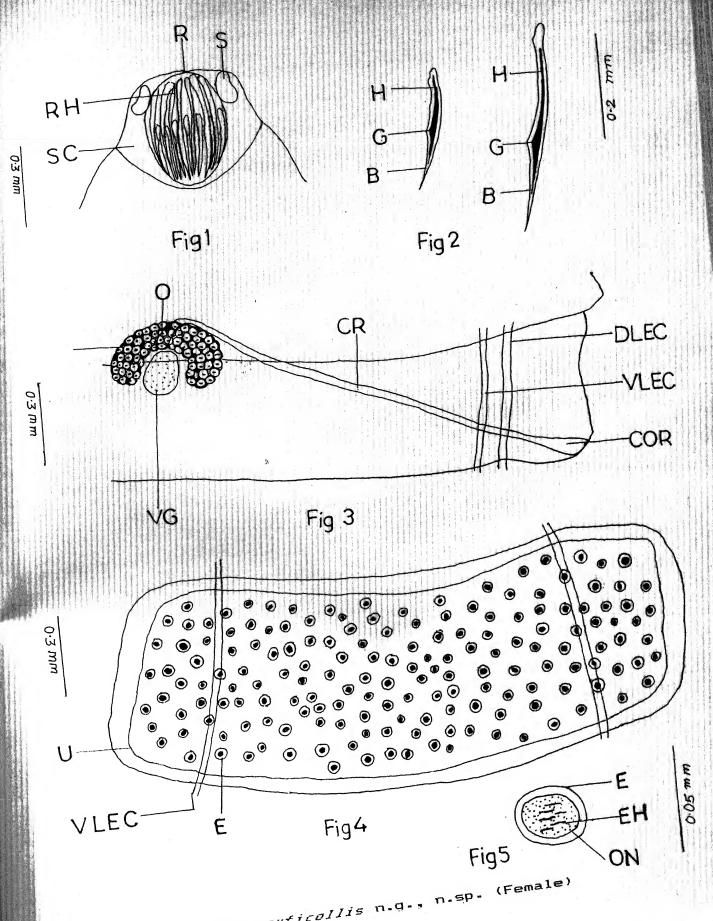
Bundelkhandia ruficollis n.g., n.sp. (Male)

### Bundelkhandia ruticollis n.g.. n.sp.

### (Female)

Fig 1	Scolex (5x10)
Fig 2	Rostellar hooks (10x10)
Fig 3	Mature proglettid (5x10)
Fig 4	Gravid proglettid (5x10)
Fig 5	Egg with embryonic hooks (10x45)

Abbreviations: - B. blade: COR, copulatory region: CR. conducting region; DLEC, Dorsal Longitudinal excretory canal; E. egg; EH. embryonic hook; G. quard: H. handle; D. ovary; ON, onchospheres; R. rostellum; KH. rostellar hook; S. sucker; SC, scolex; U. uterus; VG. vitelling gland; VLEC, ventral longitudinal excretory canal.



Bundelkhandia ruficollis n.g., n.sp. (Female)

Dioecocestidae Southwell, 1980 Family

Diperocestinae Funrmann, 1936 Subfamily :

Uzdaor photestus 11.9. Genus

Diomorphocestus newsrourensis n.g.. Species n.sp.

(Fig Male 1-4, PP 239 ) (Fig Female 1-5, FP 241)

grebs. Podiceps ruficollis (P) were examined at Hamirpur (U.P.), two were found infected little with four cestodes. Each host harbours one male and one female restode in its intesting. Morphological studies the cestodes revealed them to belong to the genus Dieprehocestus n.g. Subfamily Dipecocestinae Fuhrmann, 1936 and family Dioecocestidae Southwell, 1930.

## Generic diagnosis

## Diamorphocestus m.o.

large sized worms with two sets of reproductive organs and one set of female reproductive organs. Cirrus pouch elongated. External vesicle absent. Cirrus armed. Testes numerous in one medial group. Ovary transversely elongated. Vitellaria compact, postovarian. Vagina unilateral. Receptaculum seminis near the distal end of vagina. Uterus simple sac like. Parasites of Podicipediformes.

### Diomorphocestus hamirpurensis n.g., n.sp.

### Male

Cestodes measure 80-89 cm in length and 3.571 in maximum width as seen in the mature proglottids. All proglottids broader than long, immature and anterior mature proglottids acraspedote; posterior mature and gravid proglottids craspedote.

Scolex measures 0.345-0.388x0.548-0.591 (0.367x0.571). Suckers unarmed, oval to round measure 0.078-0.090x0.081-0.096 (0.084x0.089). Rostellum protrusible, longer than broad measures 0.318-0.336x0.338-0.352 (0.327x0.345). Rostellum bears 14-16 rostellar hooks, arranged in single row. Rostellar hooks measure 0.248-0.273 (0.261) in length. Handle, 0.096-0.114 (0.106); blade, 0.144-0.162 (0.153) and guard, 0.012-0.028 (0.020) in length.

Neck absent. Immature proglottids measure 0.013-0.085 $\times$ 0.085 $\times$ 0.085

male genitalia double. Lestes 38-71 in number. distributed in one group within the limits of ventral longitudinal excretory canals. Lestes measures 0.021-0.058x0.014-0.068 (0.039x0.041). Cirrus pouch measures 0.041-0.512x0.031-0.176 (0.387x0.104). crosses the ventral longitudinal excretory canal. Cirrus prominent measures 0.323-0.539x0.102-0.280 (0.431x0.191). armed

with 10-15 rows of cirrus spines. Cirrus spines measure 0.0016-0.0032 (0.0024) in length. Internal seminal vesicle measures 0.034-0.255x0.017-0.091 (0.145x0.054). External seminal vessicle absent.

Genital atrium measures 0.017-0.171 (0.144) deep and 0.031-0.255 (0.153) wide. Genital openings bilateral located in the middle of the proglottids margin.

Ventral longitudinal excretory canal measures 0.017-0.034 (0.022) in diameter.

### Female

Cestodes measure 52-68 in length and 4.335 in maximum width as seen in the gravid proglettids. All broader than long. Immature and anterior mature proglettids acraspedete; posterior mature and gravid proglettids craspedete.

Scolex measures 0.379-0.396x0.728-0.756 (0.388x0.742). Suckers four, unarmed measures 0.084-0.099x0.118-0.127 (0.092x0.122). Rostellum protrusible, longer than broad measures 0.302-0.324x0.288-0.311 (0.313x0.299). Rostellum bears 14-16 rostellar hooks arranged in single row. Rostellar hooks measure 0.214-0.252 (0.233) in length. Handle, 0.120-0.144 (0.132); blade. 0.096-0.108 (0.102) and guard. 0.012-0.026 (0.019) in length.

Neck absent. Immature proglottids measure 0.017-0.051x0.765-1.532 (0.034x1.147); mature proglottids measure 0.051-0.476x1.564-4.253 (0.263x2.909) and gravid proglottids measure 0.306-0.538x2.981-4.335 (0.422x3.658).

Female genitalia single per proglottids. Ovary transverse tube like, slightly poral measures 0.034-0.185x0.085-0.321 (0.109x0.203). Vitelline gland postovarian, compact measures 0.038-0.126x0.039-0.096 (0.080x0.065). Vagina unilateral differentiated into copulatory and conducting regions. Copulatory region measures 0.086-0.276x0.054-0.108 (0.181x0.081) and conducting region measures 0.028-0.039 in diameter. Receptaculum seminis measures 0.043-0.103x0.017-0.052 (0.073x0.035).

Uterus sac like measures 0.238-0.374×3.061-3.817 (0.306×3.439). extend beyond the limits of ventral longitudinal excretory canals. Eggs measure 0.018-0.038×0.018-0.038 (0.028×0.028). Unchospheres measure 0.012-0.025×0.012-0.025 (0.019×0.019). Embryonic hooks measure 0.0121-0.0132 (0.0126) in length.

Ventral longitudinal excretory canals measure 0.036-0.051 (0.044) in diameter.

#### Discussion

testes and denital pores differ from the other genera

of the family Dioecocestidae Southwell, 1930 but comes slightly closer to *Dioecocestus* Fuhrmann, 1900.

It differs from *Disecocestus* Fuhrmann, 1900 in having single group of testes, transversely elongated ovary, uterus simple sac like and vagina unilateral.

In the light of above discussion it is proposed to accommodate the present form as a new genus Diomorphocestus and a new species, Diomorphocestus hamirpurensis n.g., n.sp.

Host : Podiceps ruficollis (P.)

Habitat : Intestine

Locality : Hamirpur (U.P.)

Holotype : Department of Zoology.

Bipin Bihari (P.G.) College, Jhansi

#### Table-25

### Comparison of the characters of the genus closer to Dipmorphocestus.g.

	Dioecocestus Fuhrmann, 1900	Diomorphocestus
Testes	Divided into two	In single group
Dvany	Two-winged. multi lobed	transversely elongated
Jterus	Transverese tube later with dorsal out prowths	Simple sac like
Vagina	Alternating irregularly	Unilateral

## Key to the genera of the subfamily Dioecocestinae Fuhrmann, 1936

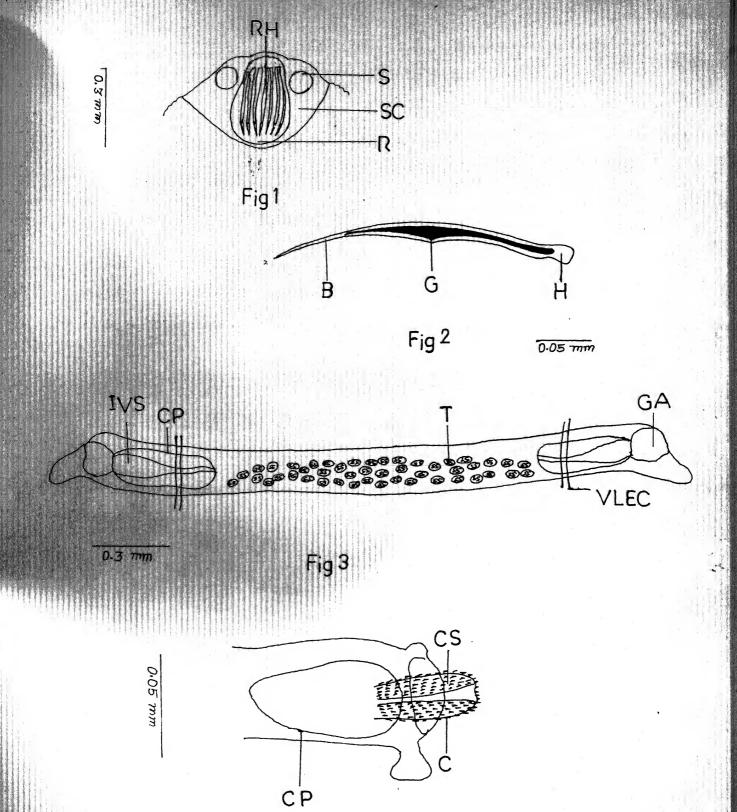
- 1a. Individually dioecipus testes divided into two groups, vagina alternate irregularly ... Dioecocestus
- 1b. Individually directous testes in single group, vagina unilateral ... Direct phocestus

## Diomorphocestus hamirpurensis n.g., n.sp.

(Male)

Fig	Ĭ	Scolex (5x10)
Fia	2	Rostellar hook (5:45)
Fig	3	Mature proglattid (Sajo)
Fio	45	Cirrus with spines (10845)

Abbreviations :- B. blade; C. cirrus: CF. cirrus bouch; CS. cirrus spine; G. quard: GA. genital abrium: H. handle; IVS. internal seminal vesicle; C. costellum: RH, rostellar hook: S. suckcer: SC. scolex; T. testes: VLEC, ventral longitudinal excretory canal.



Diomorphocestus hamirpurensis n.g., n.sp. (Male)

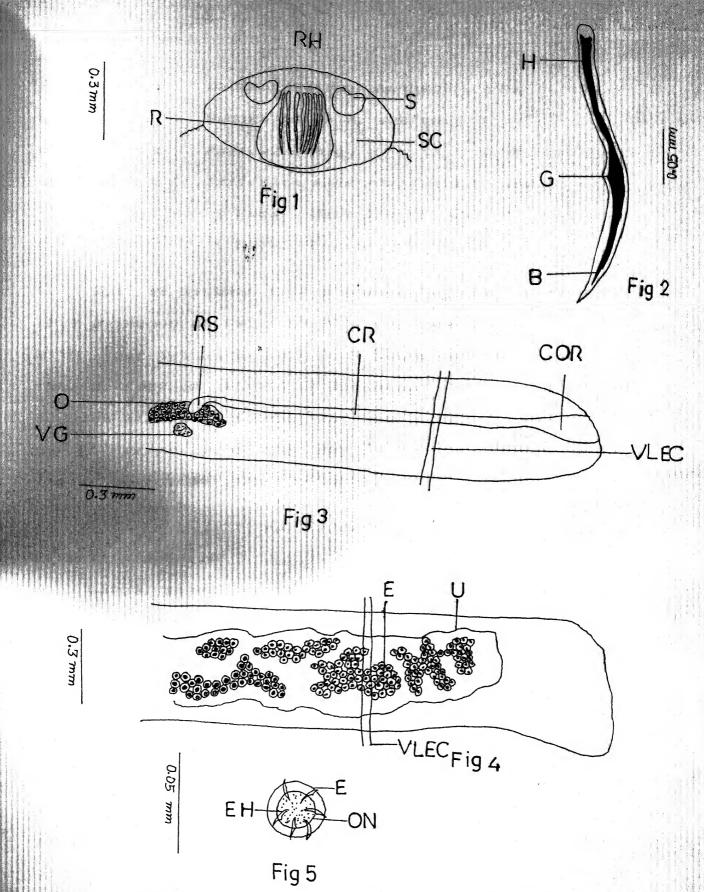
Fig4

#### Diomorphocestus hamirpurensis n.g., n.sp.

#### (Female)

Fig 1	Scolex (5x10)
Fig 2	Rostellar hook (5x45)
Fig 3	Mature proglottid (5x10)
Fig 4	Gravid proglottid (5x10)
Fig 5	Egg with embryonic book (10x45)

Abbreviations: - B. blade: COR. copulatory region: CR. conducting region: E, egg: EH. embryonic hook: 6. guard: H. handle: 0. ovary: ON. onchospheres: R. rostellum: RH. rostellar hook: S. sucker: SG. scolex: U, uterus: VG. vitelline gland: VLEC. ventral longitudinal excretory canal.



Diomorphocestus hamirpurensis n.g., n.sp. (Female)

Family : Dioecocestidae Southwell, 1930

Subfamily: Podiceliinae n. subfam.

Genus : *Policelia* n.g.

Species : *Policelia sagarensis* m.g., m.sp.

( Figs. Male 1-4 PP 249 )

( Fids. Female 1-5 PP 251 )

Out of sixteen little grebs, Podiceps reficallis (P.) examined at Sagar (M.P.), two were found infected with four cestodes. Each host bears one male and one female cestode in its intestines. The morphological studies of cestodes revealed them to belong to the new genus Podicelia of the new subfamily Podiceliane; family Diperprestidae Southweil, 1930.

#### Podicelia n.g.

### Beneric diagnosis

Large sized worms, Rostellum with 18-20 hooks, arranged in single row. Proglottids wider than long, craspedote and acraspedote. Male with two sets of reproductive organs per proglottid. Testes disappear on posterior proglottids. Cirrus pouch oblique, crosses the ventral longitudinal excretory canals. Internal seminal vesicle present. Cirrus armed. Testes numerous in single field; some testes overlapping on another proglottid. Female genitalia single. Overy horse shoe-

shaped. Vitelline gland postovarian. Vagina opens through vaginal pore. Vaginal pores unitateral. Receptaculum seminis near the distal end of vacina. Uterus annular. Parasite of aquatic birds.

# *Podicelia segarensi*s n.g., n.sp.

#### Male

Cestodes measure 120-144 cm in length and 2.721 in maximum breach as seen in the mature proglottids. All proglottids broader than long. Anterior immature and mature proglottids acraspedote: posterior mature proglottids craspedote.

Scolex measures 0.228-0.265x0.348-0.411, Suckers four, Linarmed, oval to round measure 0.084-0.108x0.060-0.096 (0.096x0.078). Rostellum longer than broad measures 0.372-0.408x0.156-0.198 (0.390x0.174). Rostellum bears 18-20 rostellar hooks, 0.120-0.131 (0.126) in length. Handle, 0.060-0.066 (0.063); blade, 0.058-0.063 (0.060) and guard, 0.0043-0.0058 (0.0051) in length.

Neck absent.immature Proglottids measure 0.0189-0.068x0.884-0.844 (0.041x0.489); mature proglottids measure 0.119-0.880x0.644-2.781 (0.484x1.688).

male genitalia bilateral. Testes 50-84 (63) in number, oval to round, in single field in the anterior half of the proglottid measure 0.024-0.054x0.024-0.054

(0.039x0.039). Testes overlaping the preceding proglottids. Cirrus pouch measure 0.204-0.850x0.119-0.265 (0.527x0.192), obliquely elongated, overlapping the anterior proglottids and crosses the ventral longitudinal excretory canals. Cirrus measures 0.081-0.511x0.048-0.370 (0.296x0.209). Cirrus armed with 9-23 rows of spines measuring 0.0029-0.00114 (0.072) in length. Internal seminal vesicles measure 0.088-0.184x0.038-0.081 (0.136x0.061). External seminal vesicle absent.

Genital atrium measures 0.115-0.330 (0.214) width and 0.068-0.204 (0.134) depth. Genital openings bilateral, located in the anterior half or middle of the proglottids margin.

Ventral longitudinal excretory canals measure 0.012-0.051 (0.032).

#### Female

Cestodes measure 111.2-115 cm in length and 4.420 in maximum breadth as seen in the gravid proglottid. All proglottids broader than long. Anterior immature and mature proglottids acraspedote: posterior mature and gravid proglottid craspedote.

5colex measures 0.294-0.310x0.515-0.545. Suckers four, oval to round, unarmed measure 0.138-0.145x0.061-0.109 (0.085x0.105). Rostellum longer than broad measures 0.476-0.564x0.224-0.266 (0.520x0.245).

Rostellum bears 18-20 rostellar hooks, arranged in single row. Rostellar hooks measure 0.122-0.156 (0.139) in length. Handle, 0.084-0.096 (0.090): blade, 0.048-0.060 (0.054) and guard, 0.014-0.024 (0.019) in length.

Neck absent. Immature proglottids measure 0.012-0.048x0.491-0.682 (0.031x0.587); mature proglottids measure 0.374-0.765x0.761-3.064 (0.569x1.912) and gravid proglottids measure 0.511-1.275x3.231-4.423 (0.892x3.825.

Female genitalia single per proglottids. Ovary horse shoe-shaped slightly poral on anterior half of the proglottid measures 0.041-0.425x0.255-0.816 (0.233x0.535). Vitelline gland postovarian measures 0.108-0.204x0.017-0.173 (0.156x0.095). Vagina measures 0.012-0.030 (0.021) in diameter. Receptaculum seminis measures 0.049-0.112x0.034-0.068 (0.086x0.051).

Vaginal pore measure 0.036-0.108(0.072) deep and 0.012-0.096 (0.054) wide. Vaginal pores unilateral located in anterior half of the proglotted margin.

Uterus sac like measures 0.681-0.765x2.543-3.511 (0.788x3.027). Extend beyond the limits of ventral longitudinal excretory canals. Eggs measure 0.084-0.041x0.086-0.048 (0.088x0.037). Onchospheres measure 0.018-0.031x0.018-0.031 (0.084x0.084).

Qentral longitudinal excretory canals measure 0.012-0.028 (0.020) in diameter.

#### Discussion

The present form differs from subfamily Dioecocestinae Fuhrmann, 1936 in having annular uterus with out opening and Magina With prominent vaginal pore. From subfamily Gyrocoellinae Yamaguti, 1959 it differs in having individually dioecious worms, male with double sets of reproductive organs and female with a single set of reproductive organs, prominent unilateral Magina with Maginal pore.

In the light of above discussion it is proposed to accommodate the present form in a new sub family Podicellinae type new genus, Podicella and new species, Pavicella sagarensis n.g., n. sp.

Host : Podiceps ruficollis (F)

Habitat : Intestine

Locality : Sagar (M.P.)

Holotype : Department of Zoology, ...

Bipin Bihari (F.G.) College, Jhansi

# Key to sub families of Dioecocestidae

Individually disections; male with a double set of reproductive organs; uterus a transverse tube; vagina alternating irregularly without vaginal pore.

... Dinecocestinae

Individually or regionally dioectious;

male and female with a single set of
reproductive organs; uterus annular,
with or without openings; vagina alter
rnating regularly or irregularly
without pore or absent "... Syrocoellinae"

Individually dioecious; male with a double set of reproductive organs; uterus annular.

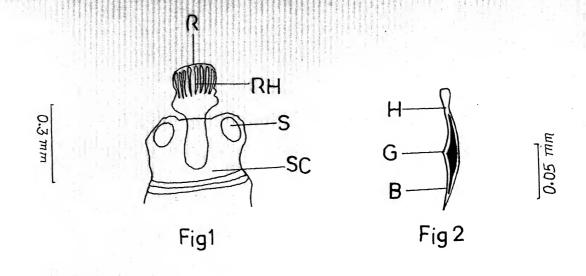
vagina unilateral with prominent pore ...Podicellinae Type genus Fodicella n.g.

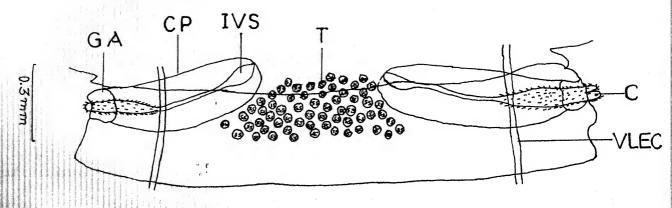
## Podicelia sagarensis n.g., n. sp.

(Male)

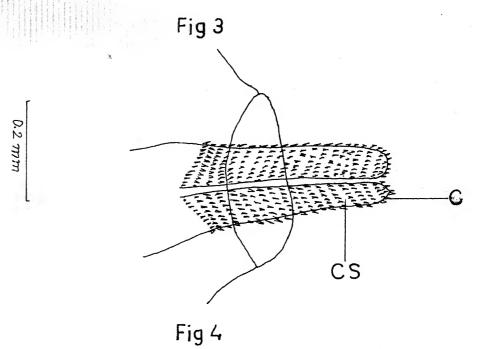
Fig	1	Scolex (5x10)
Fig	2	Rostellar hook (5:45)
Fig		Mature proglettic (5x10)
Fig	4	Cirrus with spines (10x10)

Abbreviations: - B. blade; C. cirrus; Ch. cirrus pouch: CS, cirrus spine; G. quard: GA, genital atrium; H. handle; IVS, internal seminal vestcle: R. rostellum; RH, rostellar hook; S. sucker; SC. scolex: T. testes; VLEC, ventral longitudinal excretory canal.





llus



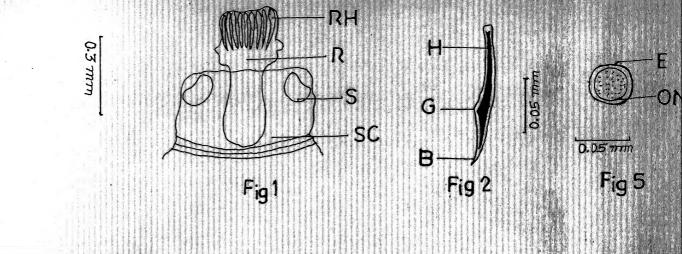
Podicelia sagarensis n.g., n.sp (Male)

Podicelia sagarensis n.g., n. so.

## (Female)

Fig 1	Scolex (5x10)
Fig 2	Rostellar hook (5:45)
Fig 3	Mature proglettid (tix10)
Fig 4	Gravid progrottid (5:10)
Fig 5	Egg (5x45)

Abbreviation: B. blade: E. egg: G. quard: H. handle: O, ovary: ON, onchospheres: R. rostellum: RH. rostellar hook: RS, receptaculum seminis: S, suckers: SC, scolex: U, uterus: V, vagina: VG, vitelline gland: VLEC. ventral longitudinal excretory canal.



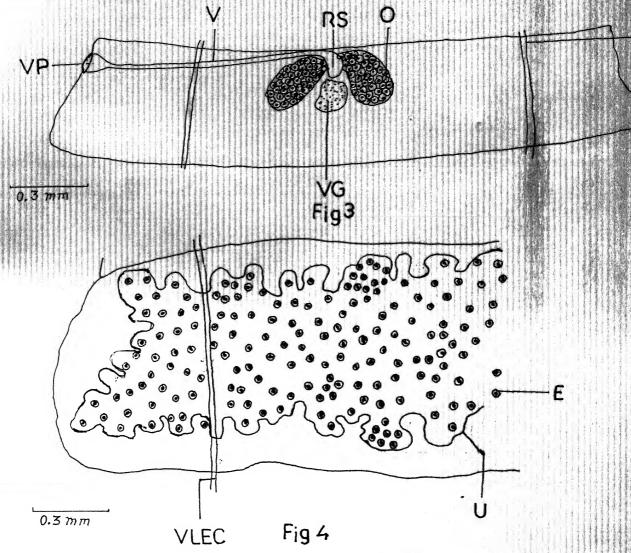
0)

0)

handle;

stellar

Scolen



Podicelia sagarensis n.g., n.sp. (Female)

PART - G

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